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FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THREATENED AND ENDANGERED SPECIES ON THE ALLEGHENY NATIONAL FOREST

JULY 2000

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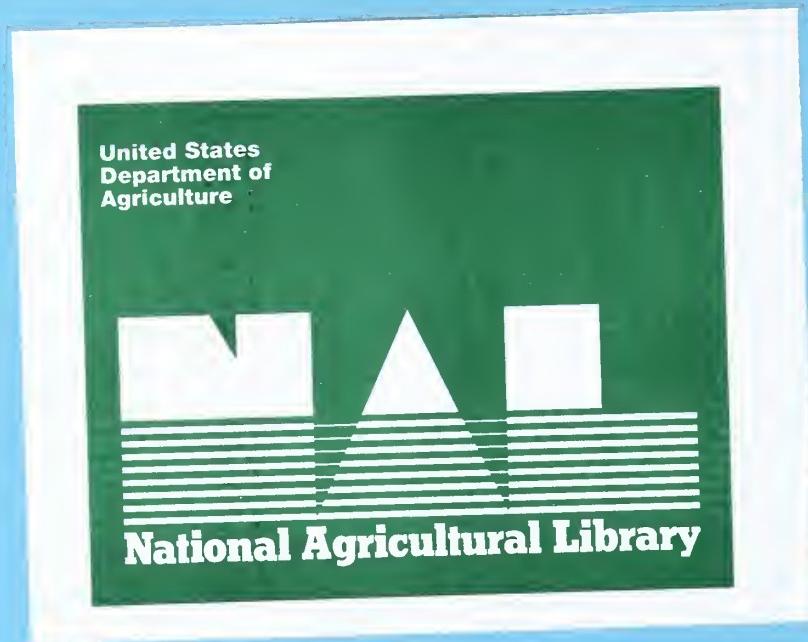
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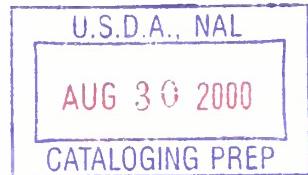
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APPENDIX A

Conservation Program for the Indiana Bat, Bald Eagle, Northern Riffleshell, Clubshell, and Small Whorled Pogonia on the Allegheny National Forest

July 2000



PURPOSE

The purpose of this Conservation Program is to address actions that the Allegheny National Forest (ANF) will undertake to conserve threatened and endangered species under Section 7(a)(1) and (2) of the Endangered Species Act of 1973 as amended. Under Section 7(a)(1) "...Federal agencies, in consultation with, and with the assistance of the USF&WS ...carry out programs for the conservation of endangered species and threatened species...". Federal agencies shall consult with the Fish and Wildlife Service to carry out actions to fulfill their Section 7(a)(1) responsibilities. Under Section 7(a)(2) Federal agencies shall consult with the USDI. Fish and Wildlife Service (FWS) to "insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of... critical habitat"

This document addresses actions that will be taken to meet both Section 7(a)(1) and (2) responsibilities. All actions are dependent on available funding through annual budgets, however, non-compliance with a mandatory term or condition would trigger the need for further consultation with the FWS. In the event that a species is recovered and de-listed (e.g. Bald eagle), some conservation actions may change.

The Conservation Program is subject to change as new information on included species is obtained, and as Forest Plan monitoring occurs. Such changes will be made following consultation with, and with the assistance of the FWS.

RELATIONSHIP TO OTHER DOCUMENTS

To meet the consultation requirements under Section 7(a)(2), the ANF completed the Biological Assessment for Threatened and Endangered Species on the Allegheny National Forest in December 1998. The FWS responded with a Biological Opinion on the Impacts of Forest Management and Other Activities to the Bald eagle, Indiana bat, Clubshell, and Northern riffleshell on the Allegheny National Forest, Pennsylvania on June 1, 1999. This Biological Opinion (BO) provided terms and conditions to insure that actions carried out under the direction of the Forest Plan would minimize the potential for incidental take. In addition, it provided conservation recommendations that could be implemented by the ANF to meet responsibilities under Section 7(a)(1). The Biological Opinion was amended on June 1, 2000 to allow category-specific incidental take not realized in one fiscal year to be carried over into fiscal years beyond 2003, at annual levels not to exceed those authorized for 2003. Neither the annual nor the cumulative category specific totals shall be exceeded without further consultation with the Fish and Wildlife Service.

Additional guidance to conserve and recover each threatened or endangered species throughout its range is provided in a species-specific recovery plan. Each recovery plan has been developed by a team of scientists who are considered experts on the species being addressed. A National Forest such as the ANF

may encompass only a small part of the range of a species and all recovery objectives may not be applicable. Objectives in these recovery plans that are applicable to the ANF have been adopted in this Conservation Program. These plans include:

1. Indiana Bat Revised Recovery Plan, Agency Draft, March 1999;
2. Northern States Bald Eagle Recovery Plan, July 29, 1983;
3. Clubshell and Northern Riffleshell Recovery Plan, Technical/Agency Draft, September 1993;
4. Small Whorled Pogonia Recovery Plan, First Revision, November 13, 1992;

DEVELOPMENT OF THE CONSERVATION PROGRAM

This Conservation Program includes the actions that will be implemented with respect to T & E species in response to Section 7(a)(1) and (2) requirements. While there are distinct differences in the requirements of each of these sections, in practice there is a great deal of overlap between the actions being proposed to comply with both of these sections. For purposes of developing a comprehensive plan that provides for continuity in implementation and ease of reference, the actions will be presented as one plan.

Some of the items included here are the non-discretionary terms and conditions issued in the BO (Section 7(a)(2) requirements), while others are conservation measures (Section 7(a)(1) requirements) which the ANF has elected to make a part of this plan. Items which are non-discretionary terms and conditions from the BO are identified in italics. Similarly, some of the items included here are administrative in nature or are included within existing Forest Plan direction, and are easily implemented through existing authorities and program of work decisions, while others necessitate amendment of the Forest Plan (by adding or modifying standards and guidelines). Those items which will be carried forward as part of the Forest Plan amendment are preceded by an asterisk.

Site-specific situations with potential impacts to T & E species may arise which are not covered by a specific Forest Plan standard and guideline or conservation measure. Consultation with FWS is required for these "may affect" projects under Section 7(a) (2).

Responsibilities for implementation of this Conservation Plan rest primarily with personnel of the ANF. Some work, however, will be done cooperatively with Pennsylvania Game Commission (PGC) or FWS staff or partners such as the Pennsylvania State University.

FORMAT

A brief background statement will be presented for each of the five species being considered in this Program. This statement is intended to inform the reader of the general conditions found for the species and establish the context for specific actions included in the Program.

ALL SPECIES

1. Secure subsurface rights (e.g., mineral, oil and gas rights) within areas on the ANF identified as important endangered and threatened species habitats.

The ANF policy for acquiring mineral rights is based on the principle of "willing seller, willing buyer." Condemnation of private property in order to obtain federal ownership is not the current policy. Obtaining mineral rights for areas identified as important T&E species habitat helps conserve the species by ensuring that habitat integrity will be maintained.

2. Notify the FWS when conservation recommendations are implemented which minimize or avoid adverse effects, or benefit listed species or their habitats.
3. The ANF will make annual reports to the FWS which will include monitoring results for each species in the following sections.

Through close coordination with the FWS (as identified in #2 and #3 above), conservation of endangered species will continue with sufficient technical review and monitoring to ensure that species' needs are being met.

BALD EAGLE

Background

Currently there are three known Bald eagle nests on the Allegheny National Forest, two near the Allegheny Reservoir and the third just outside the ANF boundary along the Allegheny River. Past efforts have focused on: 1) minimizing human disturbances near nests to avoid any stress that could result in a loss of productivity; 2) searching for new nests; and 3) identifying summer and winter roosting and foraging sites that are consistently utilized by eagles. Bald eagle populations are continuing to increase throughout the United States and Canada. Future efforts will focus on the objective of maintaining suitable nesting, foraging, and roosting habitat such that all habitat components necessary to maintain a healthy, productive eagle population will be provided on the ANF.

HABITAT PROTECTION AND ENHANCEMENT

*1. Roosting and Potential Nest Trees

- a. Three or more super-canopy trees should be identified and maintained within one-quarter mile of each nest as roosting and perching sites. These trees may be large white pines, dead deciduous trees, or trees with a dead or broken top.
- b. On the side slopes surrounding the Allegheny Reservoir and on the side slopes along the Allegheny River, Tionesta Creek, Clarion River, Kinzua Creek, and Salmon Creek, maintain scattered white pines and other trees with potential for use as nesting or roosting trees. Consider not only trees that are super-canopy trees but also those that may provide nesting or roosting sites in the future such that a sustainable supply will be available.

*2. Abandoned Nest Trees

- a. When a nest is classified as a remnant (one that has been unoccupied for five consecutive years and is not being maintained by eagles) retain only the 330 foot buffer zone. Prohibit disturbances within this buffer zone as stated under "Protection of Individuals".

PROTECTION OF INDIVIDUALS

*1. *The following buffer zones and time-of-year restrictions shall apply to Bald eagle nests, including those abandoned for ≤ 3 years.*

- a. *Year-round, all activities that may disturb eagles or significantly alter habitat, including, but not limited to, timber harvesting, land clearing, federal oil and gas development, road construction and operation, and trail construction and operation, shall be prohibited within a zone extending at least 660 feet from the nest (except when implemented in compliance with Item 4a). This prohibition does not apply to the implementation of measures which are necessary to protect or monitor the nest.*

- b. From January 15 to July 31 of each year, people and aircraft (under FS control) should not be allowed within 660 feet of the nest. This distance should be increased if topography and/or vegetation permit a direct line-of-sight from the nest to potential activities. This prohibition does not apply to qualified persons conducting necessary eagle research and management.
- c. From August 1 to January 14 of each year, hunting, fishing, and other recreational activities are allowable within 660 feet of the nest; however, these activities should be restricted within 330 feet of the nest.
- d. From January 15 to July 31 of each year restrict management activities that result in disturbance to nesting birds within approximately 1,320 feet of each active nest location. Examples of management activities that may be restricted include road and trail construction and maintenance, timber cutting and hauling and federal oil and gas development, etc.

(“Abandoned” includes nests abandoned for any reason – i.e. move of adults, fallen tree, and damaged nest).

- *2. Bald eagle roosting areas shall be identified and protected. Activities that may result in the incidental take of roosting eagles or degradation of roosting habitat shall be restricted within 0.25 mile (1,320 feet) of identified roosting sites (except when implemented in compliance with 4a, below).
- 3. The likelihood of Bald eagle death or injury due to fishing-associated activities shall be reduced by the monthly cleanup of discarded fishing line and lures at developed fishing access sites on and near the Allegheny Reservoir.
- 4. Ongoing and proposed activities which could potentially affect Bald eagles and are, therefore, subject to further consultation with the FWS, include the following:
 - a. Activities within a 0.5-mile radius of Bald eagle nests (including those abandoned \leq 3 years), and activities within a 0.25-mile radius of identified Bald eagle roosting areas. Such activities include, but are not limited to timber harvesting; road construction, maintenance and operation; trail construction, maintenance and operation; aerial application of herbicides or pesticides; federal oil and gas development; and construction and operation of boat launches.
 - b. The proposed installation and operation of any new access sites (e.g., recreational, boating) within the Allegheny Wild and Scenic River corridor. Bald eagle use of habitat within one mile of each proposed access site shall be assessed, and the potential direct and indirect effects of the access site on the eagle(s) evaluated.
 - c. Recreational use of the Allegheny Reservoir that may affect roosting or nesting bald eagles. Levels of activity (particularly boating-associated activity) on and near the Allegheny Reservoir will be monitored and the effects on nesting and foraging Bald eagles (particularly the Complanter and Kinzua nests) will be assessed. If any adverse effects are noted or suspected, remedial actions shall be implemented by the Forest Service, the FWS will be contacted, and further consultation will be required to determine if recreational access should be restricted.
- 5. Predator guards will be installed on Bald eagle nest trees, in co-operation with the Pennsylvania Game Commission (PGC).
- 6. Feeding of eagles may be considered a valid management tool in areas where natural prey are highly contaminated or temporarily unavailable for some reason. This management option will rarely be used and only after consulting with PGC and FWS.

INVENTORY, ANALYSIS AND MONITORING

1. In cooperation with the PGC, monitor known eagle nests and search for new ones. Search for roosting areas. Provide monitoring data to the PGC and FWS annually, at the end of each breeding season. Include information on the presence of any new eagle nests or roosts or failure of existing nests upon discovery.
2. In order to assist the FWS and the PGC in monitoring the status of the bald eagle on the ANF during the five years following delisting, according to requirements outlined in the ESA, monitor the numbers and reproductive success of nesting and wintering Bald eagles using the ANF and report the results of such surveys to the Service's State College, Pennsylvania Ecological Services Field Office and to the PGC.
3. All reports of dead eagles on the ANF will be investigated by ANF or PGC personnel and reported to local PGC Conservation Officers and the FWS. Any recovered carcasses will be placed in an ANF freezer until PGC and FWS can be contacted to determine if a necropsy is needed. In the event that an injured eagle is found by ANF personnel, it will be taken to a Pennsylvania certified rehabilitator and reported to PGC and FWS.

EDUCATION AND AWARENESS

1. *Signs and/or news releases shall be displayed or distributed to: 1) educate hunters not to shoot eagles, and 2) educate anglers on the potential dangers of discarded fishing line to eagles.*

INDIANA BAT

Background

Inventories for the availability of habitat and the occurrence of the Indiana bat have been made on the ANF that show summer roost and foraging habitat is widespread throughout the ANF. There are no known caves that serve as hibernacula or swarming sites found on the ANF. The presence of the Indiana bat has been detected through the use of Anabat detectors in 1998 and 1999. In addition, one adult male Indiana bat was caught at a mist net site in the summer of 1998. To date, no maternity roosts have been discovered. These findings confirm that Indiana bats are using the ANF as a foraging site and, while no maternity roost colonies have been found, it is certainly possible that colonies could exist on the ANF.

Direct impacts to habitat or individual bats are most likely to occur with activities which result in the removal of trees or the modification of buildings. While there is some minor risk to the possible harm or harassment of individual bats associated with these activities, there are also positive direct effects associated with timber harvest and even-aged stand regeneration practices. The BO provides for the possibility of incidental take, and is calculated based upon anticipated levels of activity expected to occur on an annual basis. Measures which minimize the risk of incidental take are included in the terms and conditions from the BO (These are included below and identified in italics).

Conservation efforts are focused on the objective of continuing efforts to establish a better understanding of the distribution of bats on the ANF. Inventory and monitoring requirements are proposed below. An additional objective is to increase public awareness and acceptance of the need to promote measures which will enhance habitat for Indiana bat and further the recovery of the species.

HABITAT PROTECTION AND ENHANCEMENT

1. *Retain all shagbark and shellbark hickories (live, dead, and dying), regardless of size, in partial and final harvest cutting units (green and salvage units). (Existing S&G)*

- *2. For both partial and final harvests in green units (harvested material consists primarily of live, healthy trees) retain all snags. Retain at least 8-15 live trees ≥ 9 inches d.b.h. per acre in final harvest units, and at least 16 live trees ≥ 9 inches d.b.h. per acre in partial harvest units.
- *3. For both partial and final harvests in salvage units (dead or dying trees make up 50 percent or more of the harvested volume), and clearcuts, retain at least 5-10 snags ≥ 9 inches d.b.h. per acre, and of these one snag ≥ 16 inches d.b.h. per two acres. Also retain at least 16 live trees ≥ 9 inches d.b.h. per acre, and 3 live trees ≥ 20 inches d.b.h. per acre in partial harvest units; and retain at least 8-15 live trees ≥ 9 inches d.b.h. per acre, and 1 live tree ≥ 20 inches d.b.h. per acre in final harvest units and clearcuts.
- *4. For partial/intermediate harvests (e.g., thinnings, shelterwood seed/prep, selection puts) in healthy stands (stands where volume being removed is predominantly healthy, living trees), reduce canopy closure to > 50 percent.
- *5. Designate and retain living residual trees in the vicinity of about 1/3 of all large diameter (≥ 12 inches d.b.h.) snags with exfoliating bark to provide them with partial shade in summer.
- *6. Live residual trees to be retained under terms and conditions 2, 3, and 5 shall, where available, be Class 1 or Class 2 trees (as identified by Romme et al 1995), or other trees exhibiting or likely to develop characteristics preferred by Indiana bats (e.g., exfoliating bark).
- *7. In order to minimize incidental take of roosting bats, all known roost trees on the ANF will be protected until such time as they no longer serve as a roost (e.g., loss of exfoliating bark or cavities, blown down, or decay). In the event that it becomes absolutely necessary to remove a known Indiana bat roost tree, such a removal will be conducted through consultation with FWS, during the time period when the bats are likely to be in hibernation (November 15 through March 31). Trees identified as immediate threats to public safety may, however, be removed at any time following consultation with the FWS. Such removal, however, will be as a last resort, after other alternatives (such as fencing the area, etc.) have been considered and deemed unacceptable.

PROTECTION OF INDIVIDUALS

- 1. Activities within a 1.5 mile radius of Indiana bat maternity sites shall be subject to further consultation. Such activities include those which may affect the Indiana bat or alter its habitat (e.g., by removing potential roost trees or altering percent canopy closure), such as timber harvesting, road construction, trail construction, and federal oil and gas development. In addition, if an Indiana bat maternity site is found on ANF, the Forest Service shall consult with FWS to determine/develop standards and guidelines and/or a conservation plan to protect and manage the site.
- *2. Demolition or removal of buildings or other man-made structures that harbor bats should occur while bats are hibernating. If public safety is threatened and the building must be removed while bats are present, a bat expert should examine the building to determine if Indiana bats are present.

INVENTORY, ANALYSIS AND MONITORING

- 1. Follow interagency working group and/or Recovery Plan recommendations for inventory and monitoring Indiana bat habitat and populations across the forest.
- 2. Pursue additional funding and partnership opportunities to complete needed inventory and monitoring work.
- 3. Monitoring of timber sales and other activities will be implemented as follows:

- a. Timber sale administrators or biologists will conduct and report the results of inspections of all timber sales on the ANF to ensure that terms and conditions related to timber harvesting have been implemented. Timber sale administrators will conduct inspections of all timber sales to administer provisions for protecting residual trees. (Residual trees are those trees not designated for cutting under provisions of the timber sale contract.) Damage to residual trees will be documented in inspection reports and proper contractual or legal remedies will be sought. The ANF will include this information in their annual monitoring reports. The ANF will make these reports available to the FWS, if requested.
 - b. Monitor percent canopy closure pre- and post-harvest, and the number of residual trees (i.e., snags, den trees, and live trees) per acre remaining on at least 10 final harvest units and 10 partial harvest units per year (including some green units and some salvage units) and report these data to the FWS. These data shall be collected within 3-6 months following harvest, and shall be reported to the FWS within 3 months of collection.
 - c. Determine the longevity of snags, den trees, shagbark hickories (live and dead), and other live residual trees remaining within 10 final and 10 partial harvest units (including both green and salvage units) by monitoring the number of each remaining per acre at intervals of 1, 3, 5, 7, and 10 years post-harvest. For the purposes of this monitoring study, the same harvest units shall be monitored during each time interval. These data shall be reported to the FWS within 3 months of collection.
5. The Forest Service will continue its efforts to determine use of the ANF by Indiana bats during the hibernation, summer roosting/maternity, and pre-hibernation seasons by implementing the following monitoring procedures. Selection of sites for future monitoring and surveys will be left to the discretion of the ANF biologists. The Service believes that implementation of the following terms and conditions is necessary to evaluate the underlying assumptions made about Indiana bat presence and use of the ANF. Implementation of these terms and conditions will, in turn, provide a more site-specific measure of the protective adequacy of Forest Plan standards and guidelines and the terms and conditions of this opinion for the Indiana bat on the ANF.
 - a. Hibernacula. Continue working with universities, the PGC, and local forest users to locate and survey caves that may contain Indiana bats. If Indiana bats are present, surveys shall continue biennially following the protocol of the Indiana Bat Recovery Team. After any gating of a hibernaculum, yearly surveys shall be conducted to determine the effects of the gate(s) on all bat species. This effort will be conducted for the first three years and then continue with the biennial monitoring recommended by the Indiana bat Recovery Team. In addition, if an Indiana bat hibernaculum is found on the ANF, consult with the FWS to determine standards and guidelines necessary to protect and manage the hibernaculum.
 - b. Continue survey efforts to determine the extent of use of the ANF by Indiana bats; such surveys should include the employment of techniques to determine the distribution of the species on the National Forest, habitat use and movements of Indiana bats during the spring-fall periods, etc. Comparative evaluations of the effectiveness of mist net surveys and Anabat Detectors are strongly encouraged. If any Indiana bats (male or female) are netted, we recommend tracking them using radio-telemetry to identify and characterize roost trees and foraging habitat. These habitat parameters will be used to develop management strategies for the protection, maintenance, and promotion of foraging areas.
 - c. Conduct surveys to identify if and where Indiana bat maternity sites are located on the ANF. Surveys efforts should be focused on those areas which, based on habitat characteristics (e.g., percent canopy closure, presence of suitable roost trees, proximity to water, etc.) and/or previous survey results (e.g., Anabat detection), appear to be conducive to maternity colonies. Surveys

should be done using the latest FWS-approved survey protocol and qualified surveyors. If any Indiana bats are netted, they should be tracked using radio-telemetry to identify roost trees and foraging habitat. The habitat at identified maternity sites will be characterized and quantified, and these habitat data will then be used to assist in identifying additional sites. Survey results shall be reported to the FWS. Some of these surveys shall be conducted in proposed timber harvest areas, especially in those areas where canopy closure will be reduced to <50 percent (e.g., final harvests such as clearcuts and shelterwood removal cuts). This is consistent with the Forest Service's requirement to "assess the occurrence of animal and plant species in all areas to be affected by land adjustment or resource management activities, and design action to avoid, minimize, or mitigate potential adverse effects" (Forest Plan, p. 4-37). The documented presence of Indiana bats within a project area shall subject that project to further consultation with the FWS.

- d. *Habitat at all sites where Indiana bats are documented on the ANF should be characterized and quantified at both local and landscape levels using GIS and other advanced computer software.*
 - e. *Upon completion of each survey, provide the results (within six months of survey/study completion) to the FWS's State College, Pennsylvania Ecological Services Field Office.*
 - f. *The amount of incidental take (both total and categorical levels, as measured indirectly by acreage) as identified in this opinion must be monitored on an annual basis. This information is to be provided to the FWS's State College, Pennsylvania Ecological Services Field Office no later than six months following the end of the previous year's activities. The amount of incidental take resulting from implemented activities shall be reported to the FWS quarterly.*
6. *The ANF will consult with the Service on any plans to use B.t. to control gypsy moth or other forest pest insects. Reduction in non-target lepidopteran abundance will be considered when developing spraying plans, especially when determining the size and configuration of spray blocks.*

EDUCATION AND AWARENESS

1. Informational and educational displays regarding all bat species will be developed to help educate the public about the value of this group of mammals. An educational slide program on the status of Indiana bat and threats to its existence will be developed.
2. Training on bats (including Indiana bat) occurring on the ANF will be provided for selected ANF employees. Training should include sections on bat identification, biology, habitat requirements, and sampling techniques (including instructions on applicability and effectiveness of using mist net surveys vs. Anabat detectors to accurately determine the presence of various bat species).
3. ANF personnel will continue to communicate with other National Forests, and disseminate Indiana bat information in order to discuss new research findings, habitat enhancements that work, and ways to deal with new bat issues. Upon request, bat information and management suggestions will be provided to land managers, private landowners, and others.

CLUBSHELL AND NORTHERN RIFFLESHELL

Background

Both the Clubshell mussel and Northern riffleshell mussel are found in the Allegheny River. No endangered mussels have been found in tributaries to the Allegheny River on the Allegheny National Forest. Sedimentation, water quality degradation, and zebra mussel infestations are threats to these two native mussels. Direct impacts could occur if a mussel bed is disturbed during construction of boat launches.

Conservation efforts are directed at meeting three objectives: 1) ensuring that ANF activities do not increase sedimentation, cause water degradation, or promote the spread of zebra mussels in the Allegheny River; 2) coordinating with other agencies and organizations to gain additional information on the distribution and abundance of these mussels through inventories and monitoring; and 3) providing educational materials to increase public awareness of these mussels.

HABITAT PROTECTION AND ENHANCEMENT

1. *A potential threat to the clubshell mussel and northern riffleshell mussel is water pollution from activities that may be occurring or could occur on the Forest. Because the pollutants that may effect endangered mussels are similar in nature, but the result of a number of different activities, the logical way to monitor and minimize the effects of these activities is to assess specific projects or types of projects, monitor water quality of selected tributaries to the Allegheny River, and remediate suspected causes of sedimentation through implementation of the terms and conditions below. Efforts should be focused on erosion and sedimentation problems occurring, or likely to occur, within the 13 percent of the ANF that drains directly into the Allegheny River.*
 - a. *Existing motorized and non-motorized trails shall be surveyed to determine which trails or trail segments are contributing sediment to perennial or intermittent streams. Appropriate erosion and sedimentation controls shall be implemented to correct identified problem areas. A progress report shall be submitted to the FWS annually.*
 - b. *Existing Forest Service roads shall be surveyed to determine which road segments are contributing sediment to perennial or intermittent streams. Appropriate erosion and sedimentation controls (as identified in the BA, p. 77) shall be implemented to correct identified problem areas. A progress report shall be submitted to the FWS annually.*
 - c. *Tree harvesting/removal activities shall continue to be monitored to ensure that standards and guidelines are in fact implemented and do in fact result in only insignificant amounts of transported sediment compared to areas where no earth disturbance takes place.*
 - d. *Oil and gas development activities (including individual Pollution Prevention and Spill Response Plans) shall continue to be monitored to ensure that guidelines for federally-owned leases are adhered to, and guidelines for privately-owned rights are adhered to. Appropriate action (e.g., reporting known or suspected violations to the Environmental Protection Agency and/or the Pennsylvania Department of Environmental Protection) will be taken when guidelines are not followed.*
 - e. *Water quality monitoring stations (i.e., locations) shall be established on several tributaries to the Allegheny River as close as possible to the confluence with the Allegheny River, with emphasis on determining sediment budgets for watersheds with varying degrees of surface disturbing activities. The design of the study and placement of the stations should be coordinated with the FWS.*
2. Continue to assess various standards and guidelines to determine their effectiveness in minimizing nonpoint source pollution. Periodically amend the Forest Plan to reflect the best available standards and guidelines for controlling erosion and sedimentation.

PROTECTION OF INDIVIDUALS

- **1. At the marina and boat launches on the Allegheny Reservoir, boats shall be screened for potential zebra mussel contamination, and boats found through screening to be at risk shall be decontaminated using a FWS-approved decontamination method. These same procedures shall apply to commercial use of the boat launch at the Buckaloons Recreation Area on the Allegheny*

River. Screening and decontamination procedures are conducted in accordance with the Zebra mussel action plan (attachment A) which is approved by the FWS and updated by agreement as needed.

*2. *Concerning perennial and intermittent streams:*

A filter strip should be maintained to minimize the movement of silt, humus, and other organic matter into the stream. The standard width is 50 feet plus 4 feet for every one degree of slope adjacent to each side of the stream or the actual size of the riparian area, whichever is larger.

INVENTORY, ANALYSIS AND MONITORING

1. Cooperate with the Service, Pennsylvania Fish and Boat Commission, and others to conduct mussel surveys of the Allegheny River and its tributaries to further knowledge about the distribution and status of the Clubshell mussel and Northern riffleshell mussel.
2. Consult with the FWS regarding the proposed installation and operation of any new access sites (e.g., recreational, boating) to be authorized, funded, or constructed by the Forest Service on the Allegheny River. Clubshell mussel and Northern riffleshell mussel use of habitat in the vicinity of such access sites shall be assessed, and the potential effects of the access site on the mussels shall be evaluated.
3. Because several zebra mussel monitoring stations are already located on the Allegheny Reservoir and Allegheny River, but are run by other agencies or entities, the Forest Service will only be required to conduct monitoring if monitoring efforts by these agencies/entities are discontinued or significantly curtailed.

EDUCATION AND AWARENESS

1. Zebra mussel educational materials (e.g., brochures) regarding the threats posed by zebra mussels, the means of zebra mussel transport, and procedures for decontaminating vessels shall be made available to persons using the marina and boat launches on the Allegheny Reservoir and Allegheny River. Signs shall be posted at the marina and boat launches on the Allegheny Reservoir, and at the boat launch on the Allegheny River (at Buckaloons) prohibiting the launching of vessels that may be carrying zebra mussels, unless such vessels have been decontaminated.
2. At canoe access sites and the boat launch at Buckaloons, the Forest Service shall establish educational displays and/or provide educational materials explaining: a) the risk (e.g., economic, ecological) posed by zebra mussels, b) methods of zebra mussel transport, c) how to tell if a boat poses a risk (i.e., might be carrying zebra mussels), d) a list of known zebra mussel infested waters (e.g., Lake Erie), and e) methods and availability of decontamination. Educational displays and materials will be subject to review and approval by the Service, and will be in place by April 1, 2000.
3. The Forest Service shall, in cooperation with the Fish and Wildlife Service and others (e.g., the U.S. Army Corps of Engineers, Pennsylvania Fish and Boat Commission, etc.) assist in developing and implementing contingency plans and protocols for zebra mussel control and/or native mussel species protection in the event of zebra mussel incursions.
4. The Forest Service shall work with other federal, state and private entities operating boat launches and marinas on the Allegheny Reservoir and Allegheny River to develop and implement education, outreach, and decontamination procedures and facilities to reduce the likelihood of zebra mussel introduction.

5. The Forest Service shall also make the decontamination station(s) at the Allegheny Reservoir and/or elsewhere on the ANF available to entities using these boating facilities.

SMALL WHORLED POGONIA

Background

This species was not included in formal consultation with FWS in the development of the Forest Plan. Status at the time of the plan was federally endangered, current status is federally threatened. Because of the paucity of information for this rare orchid, the following survey requirements were included in the Forest Plan:

"Field surveys will be conducted to determine the presence of small-whorled pogonia populations when road construction, logging, herbicide treatment, trail construction, recreation development, and oil and gas developments are proposed for areas containing suitable habitat for this species (Forest Plan, p. 4-39).

Over the past eleven years, more than 227,000 acres of the ANF have been surveyed, no Small-whorled pogonias have been found. Through informal consultation, it has been agreed that conservation efforts should concentrate on developing and implementing a new survey strategy that focuses on the highest potential habitat, on a more regular basis. The requirement for surveys on a project basis has been dropped. An additional requirement is that formal consultation will be initiated in the event the species is found.

The objective is to refine the survey strategy and methodology, such that, if the small whorled pogonia is present on the ANF it will be found and protected.

INVENTORY, ANALYSIS AND MONITORING

1. Develop a new strategy whereby the highest potential habitat on the ANF can be identified and portions surveyed each year. This strategy will be developed in consultation and cooperation with FWS and species' experts familiar with the small whorled pogonia's habitat requirements in Pennsylvania and throughout its range. The strategy will be implemented beginning in 2001 (mid-May to mid-June survey window). If this strategy cannot be implemented by this time a return to project-by-project surveys will be necessary during the survey window.
2. Notify the FWS immediately if a Small-whorled pogonia is found and consult on needed actions.

Zebra Mussel Action Plan

Allegheny National Forest

July 21, 2000

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EXHIBITS*

Exhibit 1 – 1999/2000 Zebra Mussel Poster, Regional Map of Infested Waters, Zebra Mussel brochure, Zebra Mussel watch card

Exhibit 2 - 1999 Zebra Mussel Inspection Form

Exhibit 3 – Existing Monitoring Efforts

Exhibit 4 – Draft National Voluntary Guidelines

Exhibit 5 – Allegheny National Forest Boat Launch Facilities

Exhibit 6 – Allegheny National Forest Local Car Wash Listing

Exhibit 7 – Proposed New Zebra Mussel Prevention Signs (to replace existing poster)

Exhibit 8 – Screener/Inspector Schedule 2000, Qualifications

Exhibit 9 – Self-screening Questions, Zebra Mussel Screening/Risk Determination Questionnaire, Parking Permit Envelopes

Exhibit 10 – Zebra Mussel Screening/Risk Determination Questionnaire, Recreational Boater Questionnaire

* *Due to their bulk and the costs of reproduction, exhibits and maps are not included in this Appendix, but are available upon request from the ANF Supervisor's office in Warren, PA (814-723-5150)*

INTRODUCTION

In December 1998, the Allegheny National Forest (ANF) entered into formal consultation with the U.S. Department of the Interior, Fish and Wildlife Service (FWS) regarding the potential effects of implementing activities outlined in the ANF Land and Resource Management Plan (Forest Plan) on the bald eagle, Indiana bat, Clubshell mussel, and Northern Riffleshell mussel. In June 1999 the FWS issued the Biological Opinion (BO) on the Impacts of Forest Management and Other Activities to the Bald Eagle, Indiana Bat, Clubshell and Northern Riffleshell on the Allegheny National Forest, Pennsylvania.

In this opinion, the FWS found that continued operation of Forest Service marinas, boat launches and canoe access sites on the Allegheny Reservoir, Allegheny River and Allegheny River tributaries was likely to jeopardize the continued existence of the Northern Riffleshell mussel due to the risk of introducing zebra mussels into the upper Allegheny River System. It also found that the implementation of the Forest Plan, and other projects predicated upon it through the year 2003 (with the exception of the operation of boating facilities) is not likely to jeopardize the continued existence of the northern Riffleshell.

The FWS presented three reasonable and prudent alternatives that they believe 1) can be implemented in a manner consistent with the intended purpose of the action; 2) can be implemented consistent with the scope of the action agency's legal authority and jurisdiction; 3) are economically and technically feasible; and 4) would avoid the likelihood of jeopardizing the continued existence of listed species or resulting in the destruction or adverse modification of critical habitat.

This Action Plan is developed in response to Reasonable and Prudent Alternative 1 listed in the June 1, 1999 Biological Opinion, which requires the following:

1. By July 1, 1999, the following measures shall be implemented:
 - a. Educational materials (e.g. brochures) regarding the threats posed by zebra mussels, the means of zebra mussel transport, and procedures for decontaminating vessels shall be made available to persons using the marina and boat launches on the Allegheny Reservoir and Allegheny River, and
 - b. Signs shall be posted at the marina and boat launches on the Allegheny Reservoir, and at the boat launch on the Allegheny River (at Buckaloons) prohibiting the launching of vessels that may be carrying zebra mussels, unless such vessels have been decontaminated.
2. By August 1, 1999 the Forest Service shall begin conducting spot-checks of boat owners to ensure compliance with the signage posted as part of measure 1b above.
3. By April 1, 2000, the following measures shall be implemented:
 - a. Prior to using the Forest Service marina or boat launches on the Allegheny Reservoir, boats shall be screened for potential zebra mussel contamination, and all boats found through screening to be at risk shall be decontaminated using a FWS approved decontamination method. These same procedures shall apply to commercial use of the boat launch at the Buckaloons Recreation Area on the Allegheny River. The screening method(s) and procedures (e.g., written questionnaire; visual inspection by qualified, trained personnel); decontamination methods(s) and procedures; and decontamination facility location(s) are subject to review and approval by the FWS.

- b. Administrative procedures for operation of the marina and/or boat launches on the Allegheny Reservoir by a private entity (e.g., via a Forest Service special use permit) shall include the stipulation that zebra mussel screening and decontamination procedures be followed; significant penalties shall be imposed if procedures are not followed. Periodic checks by ANF personnel on the entity administering the marina and boat launches will be conducted to ensure compliance.
 - c. Zebra mussel education materials (subject to review by FWS) shall continue to be made available to boaters using the marina and boat launches on the Allegheny Reservoir, and the signs put in place as part of measure 1b shall remain in place.
 - d. At canoe access sites and the boat launch at Buckaloons, the Forest Service shall establish education displays and/or provide education materials explaining: a) the risk (e.g., economic, ecological) posed by zebra mussels, b) methods of zebra mussel transport, c) how to tell if a boat poses a risk (i.e., might be carrying zebra mussels). d) a list of known zebra mussel infested waters (e.g. Lake Erie), and e) methods and availability of decontamination. Educational displays and materials will be subject to review and approval by the Service, and will be in place by April 1, 2000.
4. Because several zebra mussel monitoring stations are already located on the Allegheny Reservoir and Allegheny River, but are run by other agencies or entities, the Forest Service will only be required to conduct monitoring if monitoring efforts by these agencies/entities are discontinued or significantly curtailed.
 5. The Forest Service shall, in cooperation with the Fish and Wildlife Service and others (e.g. the U.S. Army Corps of Engineers, Pennsylvania Fish and Boat Commission, etc.) assist in developing contingency plans and protocols for zebra mussel control and/or native mussel species protection in the event of zebra mussel incursions.

CURRENT SITUATION

STATUS OF IMPLEMENTATION OF THE BIOLOGICAL OPINION

By July 1, 1999, educational materials and signs were made available for recreationists visiting the ANF per Reasonable and Prudent Alternative requirements 1.a. and b. Posters and maps were displayed on bulletin boards at boat launch sites. The poster provided basic biological data pertinent to the zebra mussel and highlighted concerns related to T&E species. It outlined ways to reduce the risk the spread of zebra mussels and gave instructions on decontamination options. The map displayed regional bodies of water that have been infested (refer to Exhibit 1). A Zebra Mussel Brochure displaying the same information as the poster was made available for boaters to take. A Zebra Mussel watch card was also made available to boaters that helps with identification. The brochure and watch card were placed in fee envelope boxes at self-service boat launch pay stations and were also passed out at pay stations staffed by concessionaires when day passes were sold. This material was also posted and made available at all ANF offices.

By August 1, 1999, Forest Service fee collection officers began contacting boaters to determine their awareness of zebra mussel contamination and to determine if their boats were at risk. Approximately 36 boaters were surveyed between August 1 and September 7 and none identified that their boat had been in infested water (Exhibit 2).

INTRODUCTION

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CONTAMINATED AREAS OF CONCERN IN CLOSE PROXIMITY TO THE ANF

Several bodies of water within a day's drive of the Allegheny Reservoir and Allegheny River are infested with zebra mussels (Figure 1). The closest known infestation occurs in Chautauqua Lake in New York. In addition, Lake Erie, Lake Ontario, the Finger Lakes, and the Allegheny River support populations of zebra mussel. Zebra mussel populations occur in the Allegheny River at Lock 7 near Kittanning, PA. The areas showing infestation in Figure 1 are within a day's drive of the ANF, including areas as far as Michigan, southern Ohio, and eastern New York.

Several monitoring efforts by the U.S. Army Corp of Engineers, Pennsylvania DEP and General Public Utilities are ongoing in the immediate area of the ANF (Exhibit 3). These include the Allegheny Reservoir, Allegheny River, and Conewango Creek. Thus far, none have been detected to date.

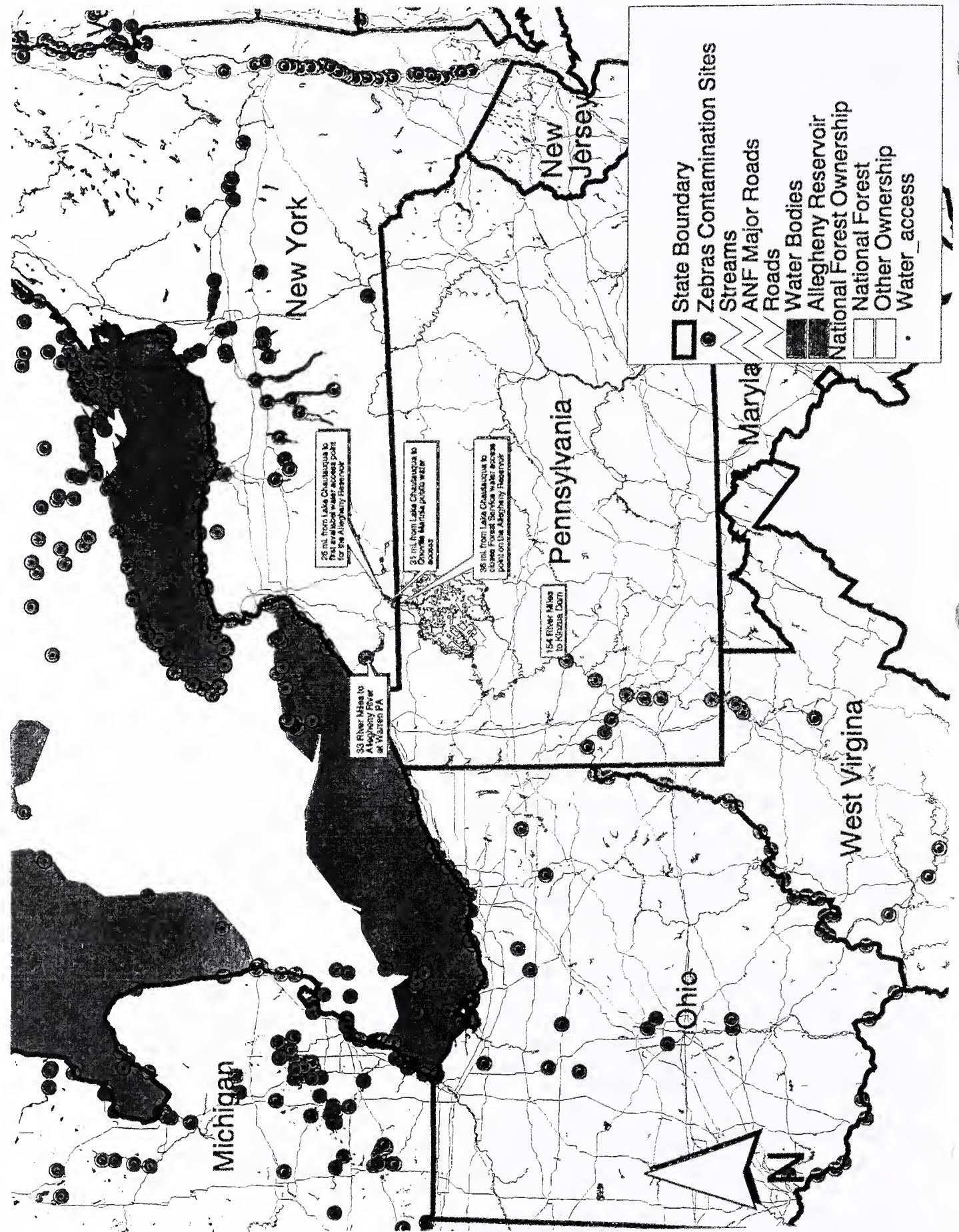
BIOLOGY AND LIFE CYCLE OF THE ZEBRA MUSSEL

The success of introduced zebra mussels can be related in large part to a life history that allow it to spread quickly into un-infested waters (Ackerman 1995). Zebra mussels are unusual among freshwater mussels in that they have a planktonic larvae and postlarvae form (Griffiths et al. 1991). The planktonic stage goes through four life stages before becoming an adult. These life stages include: 1) trochophore stage that occurs after fertilization, and is rarely seen outside of laboratory culture; 2) D-shaped veliger that occurs with the development of a velum and the secretion of a D-shaped larval shell; 3) veliconcha stage that occurs with the secretion of a second larval shell that leads to the last obligate free-swimming veliger stage; and 4) the last veliger stage known as the pediveliger. The pediveliger stage can both swim using its velum or crawl using its fully functional foot. As such, pediveligers are the larval stage that settles onto surfaces. These larval stages are free-swimming and can last 2-5 weeks (Jensen 2000). Pediveligers actively select substrates in which they settle by secretion of byssal threads and undergo metamorphosis to become plantigrade mussels, the first of three stages leading to the adult.

The plantigrade mussel is referred to as a juvenile mussel when it begins to develop its feeding apparatus. This can occur when the mussel is less than 1 mm long. Increased growth and development lead to sexual maturity and are then an adult mussel. Zebra mussels have been reported to grow up to a length of approximately 50 mm, although the majority of mussels observed in the field are likely to be 1 to 20 mm due to population dynamics. Like a number of other bivalves, zebra mussels produce byssal threads as adults, but these attachments may be broken enabling their translocation to new areas. Likewise, small juveniles can also break away from their attachment and generate new buoyant threads that allow them again to drift with the currents and find a new home.

Reproduction can begin occurring once water temperatures reach 54°F in the spring, and until they drop below this temperature again in the fall (Snyder et al 1997). During this time period, a fully mature female may produce up to one million eggs. In Lake Erie, spawning may begin as early as May and end as late as October. Spawning peaks during July and August when water temperatures are above 68°F. It is estimated that 1 to 3 percent survive this planktonic stage. Adults have been reported to live up to 3 years in Lake Erie.

Figure 1 Regional map of zebra mussel infested waters (USGS)



On the Allegheny Reservoir, the water reaches 54°F sometime in mid-May, rising to temperatures above 68°F in July and August, and drops below 54°F again by about mid-October (USACOE 2000). While water temperature and other water chemistry parameters are suitable for the habitation of zebra mussels, large sections of the reservoir are unsuitable for populations because of the annual 28' draw down of the pool, exposing large amounts of shoreline area that freeze during the winter months.

MEANS OF INTRODUCTION FROM CONTAMINATED WATERS TO UNCONTAMINATED WATERS

There are several ways that zebra mussels can spread from contaminated water to uncontaminated water. The first, and most common method is the direct movement of mussels from one body of water to another by a connected water source (O’Neil 2000). This is most likely to occur from an infested upstream source serving as nursery water that disperses veligers downstream. The section of the Allegheny River upstream of Lock 7 to Warren is susceptible to this type of dispersal from veliger movement downstream from Chautauqua Lake in New York. Conewango Creek, which drains the Chautauqua Lake drainage, flows unimpeded into the Allegheny River at Warren, PA. This confluence is located approximately 9 miles north of the Northern Riffleshell population known to occur in the Allegheny River (WPC and ANSP 1989). Figure 1 displays zebra mussel infested areas located near the Allegheny National Forest.

The second means of introduction could occur by transporting zebra mussels on watercraft or trailers that have been used in contaminated waters. It is possible for adult, veliger, and juvenile zebra mussels to attach themselves to the various portions of a watercraft that are moored for more than one day in infested waters, or by aquatic vegetation that becomes entangled on a boat trailer or motor as it is being pulled from a body of water. Veligers, the microscopic life stage, could also be transported in bilge water, live wells, within the boat trailer frame, tail light housings and other small areas where water could collect. However, veligers do not survive well and are a low risk for introducing zebra mussels (Jensen 2000).

Another possible means of movement is from bait buckets. Bait and water collected from infested waters could contain the veliger stage of the zebra mussel. Water from the bucket could be dumped into the un-infested water resulting in a possible contamination. As mentioned, veligers do not survive well and are a low risk for introducing zebra mussels.

GUIDELINES FOR WATERCRAFT DECONTAMINATION

The Draft National Voluntary Guidelines (Exhibit 4) include several methods that can be used to reduce the risk of spreading zebra mussels. These guidelines were used as a basis for the information that the Forest Service is making available to the recreational boater, whether the boater has been on infested waters or not.

AQUATIC NUISANCE SPECIES REGULATIONS

Currently the State of Pennsylvania does not have a specific regulation that deals with aquatic nuisance species. There is a regulation in the PA Fish and Boat Code (73.1 under law 2102(c)) that addresses the transportation of fish (which includes baitfish, fish bait, etc.). However, this regulation has been on the books for some time, and was intended to address the movement of propagated fish from out-of-state into PA, as well as within the State of PA, all for commercial reasons. As a result, the PFBC feels it is not clear enough that it could be used as an enforcing tool

for aquatic nuisance species.

To address aquatic nuisance species more specifically, there is a proposed regulation being submitted to the rule making body that passes regulations for the PFBC code. It is still in the draft stage, but if successful could be on the "books" in the year 2002. This would be an enforceable regulation by the State agency.

At a recent zebra mussel/baitfish collectors workshop, several presenters (Chuck Murray of the PFBC in the Lake Erie Research Unit; Bob Nestor – Asst. Supervisor of Law Enforcement for the PFBC; and Bob Wellington - Erie Co. Dept. of Health) who have been dealing with the zebra mussel issue since it contaminated Lake Erie, agreed that education was the best alternative (as well as practical). Most felt that the Aquatic Nuisance Species regulation is needed, not only to have an enforceable regulation, but, to heighten the awareness of the problems associated with the introduction of these species.

Concerning the ANF, there is no existing law or regulation under which the Forest Service could enforce a requirement that boats be inspected or decontaminated prior to launching at a Forest Service facility. All Forest Supervisor orders must be written under the authority of subpart B of 36 CFR 261. . Endangered or threatened species are covered in 36 CFR 261.53 (Special Closures). This section allows the Forest Service to close portions of a National Forest for the protection of endangered species. Since the waters of the Allegheny Reservoir and River are not National Forest ownership, we have no authority to close either to public use. We could use this Special Closure authority to close Forest Service boat launches, however this would not achieve the desired objective of preventing the introduction of zebra mussels because of other accessible public launches as well as private facilities on both the reservoir and river. However, 36 CFR 261.58 (s) & (t) that cover occupancy and use of national forest land will allow us to prohibit the possession, storing, and transporting of zebra mussels and aquatic plant materials. With an order under this CFR the FS can prohibit boats that have zebra mussels or aquatic plant materials from launching.

Forest Service employees will take proactive steps to detect and prevent the launch of zebra mussel contaminated watercraft. Employees will aggressively seek cooperation from boaters by emphasizing the critical importance of screening, cleaning, and if necessary, pressure washing to preserve the high quality of their recreation experience. If a boat is found to have zebra mussels or aquatic plant materials it will be prohibited from launching until the boat is adequately cleaned.

BOAT LAUNCH FACILITIES ON THE ALLEGHENY RESERVOIR, THE ALLEGHENY RIVER AND TRIBUTARIES

There are 49 known boat access points north of Interstate 80 found along the Allegheny and Clarion Rivers, Tionesta Creek and the Allegheny Reservoir that could serve as entry points for zebra mussel from watercraft that may have been in infested waters (see Figure 2 on the following page). The majority of these sites are operated by other public or private entities, and are not under the control of the ANF. Also, the majority of these sites provide access for canoes, rowboats and watercraft smaller than 18' that are less likely to result in the spread of zebra mussel.

The ANF operates one boat launch on the Allegheny River, nine boat launches on the Allegheny Reservoir, one non-motorized boat launch at Beaver Meadows Lake (drains to Tionesta Creek), and one hand-carry boat launch on the Clarion River. These launch sites are described in Exhibit 5. Seven launches on the Allegheny Reservoir, one on the Allegheny River, and the one at Beaver Meadows are developed. The remaining sites are undeveloped. The seven developed sites on the reservoir are fee collection sites.

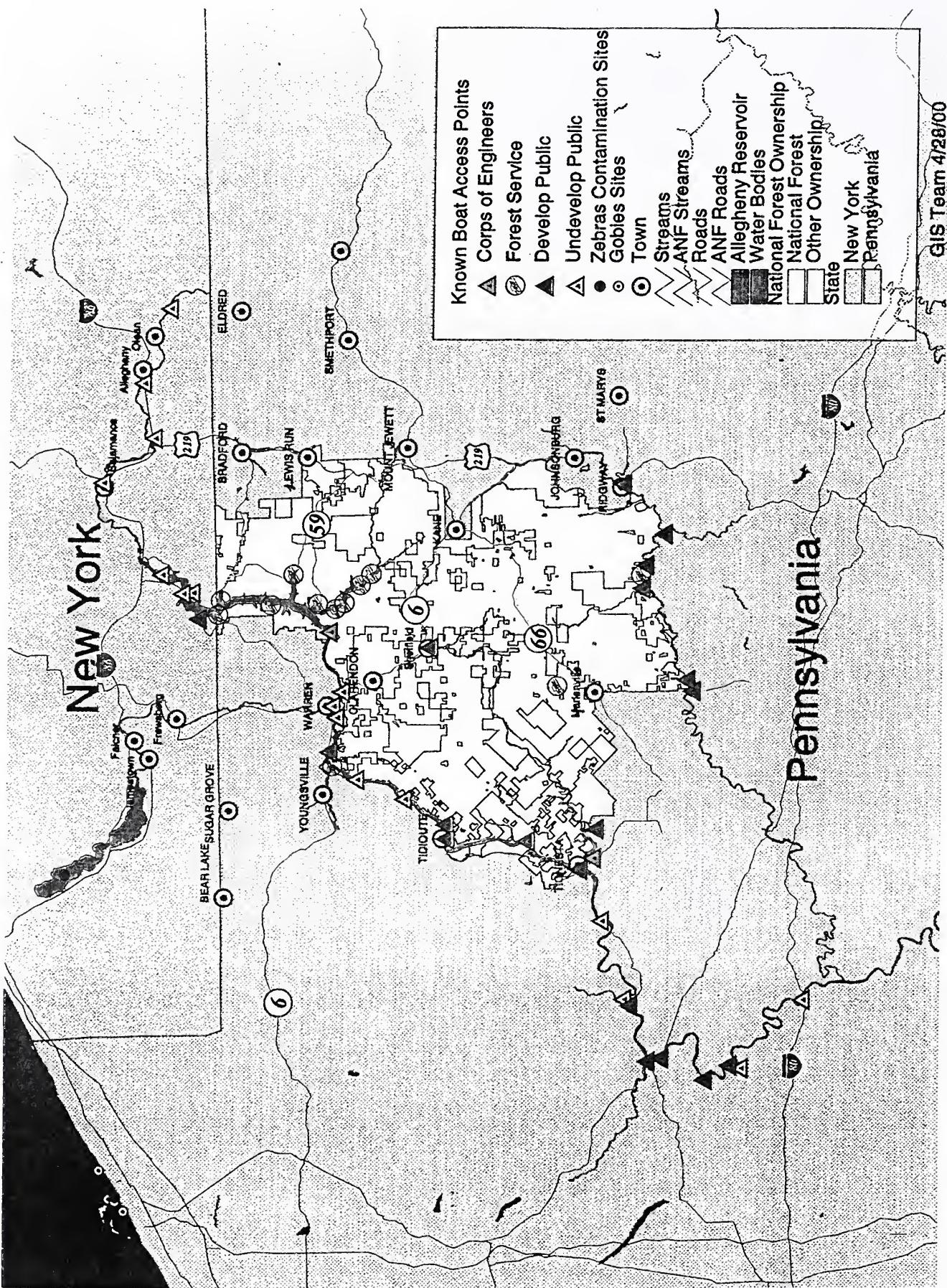
PATTERNS OF USE AT ANF BOAT LAUNCHES

Limited information is available on public use of ANF boat launches. Boat launch data are not available, however estimates of use can be made from parking receipts that are collected at fee areas, and from observations made at non-fee sites. Approximately 17,060 vehicles visited ANF managed boat launches during the 1998 peak season from Memorial Day to Labor Day (Table 1). Use occurs beyond the peak season primarily from anglers, and to a lesser extent, recreational boaters on good weather weekends. Seven boat launches are open year-round and three (Dewdrop, Kiasutha, and Wolf Run Marina) are seasonally closed (see Exhibit 5). Two that are open year-round (Dunkle Corners and Sugar Bay) are unusable during some portions of the year because of the low water levels that occur outside of the peak recreation season.

Table 1. Numbers of vehicles parking at Forest Service boat launching facilities as recorded through concessionaire and Forest Service fee collection records or personal observation (*) from Memorial Day to Labor Day 1998 at ANF Boat Launch Sites.

BOAT LAUNCH	TOTAL
Beaver Meadows*	150
Buckaloons*	615
Dewdrop*	1,500
Dunkle Corners*	260
Elijah Run	3,660
Irwin Run*	745
Kiasutha	2,430
Kinzua Wolf Run Marina	1,500
Roper Hollow	1,190
Sugar Bay *	280
Webbs Ferry	1,230
Willow Bay	3,500
<i>Total</i>	<i>17,060</i>

From this data and from recreation program management experience, we know that the greatest amount of boat use occurs at Elijah Run, Kiasutha, and Willow Bay. We also believe that a large number of boaters to the Allegheny Reservoir are repeat customers during the summer recreation season.



GIS Team 4/28/00

CONCLUSION

The Forest Service administers 9 out of 13 public launch sites on the Allegheny Reservoir and 1 out of 21 sites on the Allegheny River between Kinzua Dam and Emlenton which encompasses the designated Wild and Scenic River reaches. The success of slowing or preventing the spread of zebra mussels in the Allegheny River from recreational boat transport is heavily, if not totally, dependent upon public cooperation and a unified cooperative effort of private and public entities and acceptance of prevention measures through education and understanding.

The Forest Service is fully committed to its responsibility to assist with preventing or slowing the spread of the zebra mussel in the upper Allegheny River System. Forest Service employees will aggressively seek boater cooperation through education and persuasion. We will screen all boats that can be reached entering a staffed launch facility for signs of zebra mussel contamination (e.g. aquatic vegetation, attached zebra mussels, gritty feel). Boats will be screened after they have come to a stop in the ready area. We will closely inspect boats deemed to be moderate to high risk from the results of the screening process. If Forest Service employees determine that they must feel the boat for a thorough inspection, they will first obtain permission from the boat owner by explaining why it is necessary. If a boat has zebra mussels or aquatic plant material the employee will offer the owner two options: 1) Clean the boat before launching, or 2) Do not launch.

We have discussed options for reducing the risk of spreading zebra mussels with National Park Service personnel on the St. Croix National Scenic Waterway (NSW). Their experience has drawn the ANF to conclude that directing people to car washes (round trip averaging 1.5 hours), using a heavy handed law enforcement approach, even if there was existing authority, or an approach that would significantly inconvenience users, would result in the public circumventing the system by either giving incorrect information during screening interviews or by using other non Forest Service launch sites. It is even possible that some disgruntled users could intentionally contaminate the reservoir and river with zebra mussels. To avoid this, the Forest Service will post signs emphasizing the five point for reducing the risk of spreading aquatic nuisance species, have cleaning stations readily available, and a portable wash station available to high-risk boats. In addition, both the Sea Grant program and the NPS feel that the inspection and removal method for decontaminating boats and trailers is a practical preventive measure.

In light of the above, and demonstrated successes on the St. Croix NSW, we have concluded that a strategy of intensive boater contact to inform and educate boaters coupled with documented surveys to assess the number of potentially at risk boats using Forest Service launch sites would be a logical step for Fiscal Year 2000, and lastly the use of a portable wash station will be employed. In addition, the Forest Service will strive to develop a cooperative effort to enable agencies and stakeholders to prevent or slow the spread of zebra mussels and other exotic invasive species into and within the upper Allegheny River Watershed. The cooperative effort will try to accomplish this by developing strategies, assessing the effectiveness of strategies that are implemented, recommending tools to use against the zebra mussel and other exotic invasive species and linking agencies and stakeholders in this effort.

At the end of the Fiscal Year 2000 boating season, survey results would be assessed and a risk determination with the FWS will be made as to the effectiveness of the program.

We are confident that this approach, which is detailed in the following Action Plan, will successfully accomplish the goal of slowing or preventing the spread of zebra mussels through recreational boat transport.

ANF ZEBRA MUSSEL ACTION PLAN

OBJECTIVES

The objectives of this plan are to meet the conditions of Prudent and Reasonable Alternative 1 in the June 1, 1999 Biological Opinion. This plan will:

- Establish an effective public information and education program that alerts the public to the consequences of zebra mussel infestation.
- Provide the boating public with procedures that are effective at reducing the risk for spreading zebra mussels into the Allegheny Reservoir and Allegheny River.
- Assess the level of risk for zebra mussels being introduced into the Allegheny Reservoir and Allegheny River from transported watercraft.

The goal of this action plan is to significantly reduce the risk of zebra mussel introduction into the Allegheny Reservoir and Allegheny River from transported boats.

PUBLIC EDUCATION AND AWARENESS

Public education and awareness is the basis for the success of this action plan. This plan is intended to inform and educate the public on the potential impacts of zebra mussels, the threat it poses to the environment, and what can be done to help reduce the risk of spreading zebra mussels. The overriding message is that boater understanding and acceptance of the responsibility for self-compliance is essential to keep exotic species out of the upper Allegheny River watershed to maintain the quality of their recreational experience.

Based on the recommendations of the Sea Grant offices in Minnesota and New York (Clearinghouse office), the following will be implemented:

Signing and brochures at ANF boat launches

Four types of information will be posted at all ANF boat launch facilities (Exhibit 1). The poster, map, and car wash locations are mounted on ANF information boards that are found in prominent positions at each facility. Brochures and watch cards will be made available for boaters to take home.

Zebra Mussel Poster

This poster provides basic biological data pertinent to the zebra mussel, highlights concerns related to T&E species, and provides instructions on ways to decontaminate a boat (Exhibit 1).

Regional Map

The map displays regional bodies of water that have been infested within a day's drive of the ANF (Exhibit 1). This map allows boaters to determine if they have been in infested waters for the purpose of self-screening and subsequent decontamination procedures.

Car Wash Locations

This sign provides directions to the closest car wash from a particular boat launch, as well as the location of all car washes in proximity to the ANF (Exhibit 6). This is provided to boaters should they need to wash their boat hull.

Zebra Mussel Brochure and Watch Card

The brochure and watch card are available for boaters to take with them. The brochure provides the basic information outlined in the poster, and gives information on proper decontamination procedures that boaters should employ should decontamination be needed. The watch card includes a color photo of zebra mussel, how to identify it, and what to do if you find one (Exhibit 1).

In addition to the above, new signs are being developed that are more concise and emphasize the main points of Remove, Drain, Dispose, Rinse, and Dry (Jensen 2000). These will eventually replace the above poster that outlines decontamination procedures. An example of the new signs is shown in Exhibit 7.

Portable Wash Station

ANF personnel will provide boat hull washing procedures at ANF launches during the summer recreation season when needed. One trailer-mounted wash station will be available for use as needed to wash boat hulls and trailers, as well as for information and educational purposes. Only Forest Service inspector/screeners will operate the wash station. It will be moved to different launch sites on a rotational basis as listed in Exhibit 8.

Public Information

News Releases

ANF personnel will distribute a series of press releases to regional newspapers used to inform boaters on zebra mussel safe boating practices for boaters who frequent infested waters, and decontamination procedures. The news releases will emphasize the five points for reducing risk, and also that the objective is to slow the spread of all aquatic nuisance species. These releases will be sent out prior to Memorial Day, July 4th, and Labor Day weekends.

Internet Information

Information on zebra mussels and ANF efforts to slow the spread of the species will be available via the Internet on the ANF home page. Links to other zebra mussel information sources will be provided.

Other Public Contacts

Information on zebra mussels and ANF efforts to slow the spread of the species will be made available at all ANF offices, including the Supervisor's Office in Warren, the Bradford, Ridgway and Marienville District Offices, Kinzua Point Information Center on the Allegheny Reservoir and the Tionesta Service Center on the Allegheny River.

Zebra mussel information will be included in all ANF displays at regional trade shows and community events. The ANF will also provide zebra mussel information to area marinas and other outdoor recreation business providers for distribution to the public.

Concessionaire employees will conduct interpretive programs on zebra mussel prevention at campgrounds throughout the summer months.

Aquatic Invasive Species Task Force

ANF personnel will work towards the development of a task force that will focus efforts on aquatic invasive species. The objective of this task force will be to develop a coordinated

approach to achieve public education and awareness for reducing the risk of zebra mussel introduction into the Upper Allegheny River watershed. We will work with federal and state (PA and NY) agencies, the Seneca Nation of Indians, marina owners, and other interested private parties.

Signing at Contaminated Water sites

The ANF will work with other public and private boat launch owners outside of the ANF to post signs and provide information on reducing the risk of spreading zebra mussels into un-infested waters.

INFORMATION DISSEMINATION AND BOAT SCREENING/INSPECTION

The dissemination of zebra mussel information and boat screening/inspections that will occur at the ten boat launch sites on the Allegheny Reservoir and Allegheny River are described below (Refer to Exhibit 5 for a listing of boat launch site facilities). Zebra mussel information will be provided to 100% of our boating public using the following methods: 1) Forest Service screener/inspectors at boat launches; 2) concessionaires staffed at fee stations/booths at the entry to boat launches; and 3) zebra mussel information posted on information boards at self-service fee areas. Exhibit 8 portrays an estimate of personal contact by Forest Service employees and reflects most of the time spent at high use areas where the larger boats will launch. Although it is estimated that 48% of all boats being launched will be contacted, the actual percentage of boaters contacted will be much higher due to repeat visits. In addition, the screening is designed to capture the majority of boats larger than 18 feet with a higher average number of people per boat.

Boat inspectors/screeners will be trained to use proactive language to get boater cooperation in the screening, cleaning or washing of boats as needed. Boaters will be given the option of removing vegetation, attached zebra mussels, and wash their boat and trailer if the need is indicated before they launch or not to launch. Regardless of risk, boaters will be encouraged to remove aquatic vegetation because it represents one of the highest risks of transporting aquatic nuisance species.

Cleaning stations will be provided at developed sites on the Allegheny Reservoir for boaters to physically remove attached vegetation and zebra mussels, and to empty live wells and bait carried from contaminated waters. These stations will include scrub brushes, containers for the disposal of vegetation, bait or zebra mussels and will be located far enough away from launch areas or the shoreline to prevent any contaminated material removed from the boat or water from live wells from being washed or drained into the reservoir.

Launch Sites With Staffed Collection Facilities

The four launch sites with the greatest amount of boat use (Willow Bay, Elijah Run, Kiasutha, and Kinzua Wolf Run Marina) are managed under special use permit by concessionaires. During peak launch times (Friday afternoon/evening, and Saturday and Sunday mornings until mid-afternoon), concessionaire employees are on site. In addition, three Forest Service screeners/inspectors will be available at the three highest use areas for screening/inspection services, (Elijah Run, Willow Bay and Kiasutha). These three launch sites also have the highest use of boats greater than 18' in length.

The three Forest Service inspectors will be assigned to the three highest use sites on a rotating schedule for coverage during the peak launch times (Exhibit 8). Additionally, during the peak boating season, each boat launch will have at least one full weekday and one full weekend day staffed by a Forest Service inspector to assess normal boat launching traffic and risk of

contamination (Exhibit 8). The portable wash station will be available for use on a rotating schedule as outlined in Exhibit 8. Additional Forest Service staffing will be provided on holiday weekends (Memorial Day, Fourth of July and Labor Day) to supplement the screening/risk determination method. Staffing by concessionaire employees is variable during non-peak launch times. Screening procedures that occur during non-peak launch times are described under self-service collection facilities below. Peak launch time procedures are as follows:

Information boards are already present with educational/informational materials (Exhibit 1) described previously, at each site.

The concessionaire fee collector receives payment from boaters and hands out zebra mussel brochure (Exhibit 1) and self-screening questions (Exhibit 9) during times when Forest Service inspectors are not on site. A brief explanation of zebra mussel concern will also be given.

Forest Service screenerinspectors greet boaters after the boat owner stops on their own accord in the launch area, they explain their purpose, and asks boat owner/operators the set of screening/risk determination questions (Exhibit 10) to determine if their boat is at risk for zebra mussel contamination. The questions that will be asked to determine risk, and that could lead to decontamination procedures include:

1. When was your boat last in the water?

- A. \leq 5 days ago – GO TO 2
- B. > 5 days ago

Low risk vessel. Vessel is safe to launch. Advise boaters of ways to minimize risk of transporting aquatic nuisance species, and have any visible aquatic vegetation removed.

2. Where was your boat last in the water?

- A. Boater names one of the waters known to be infested with zebra mussels – GO TO 3.
- B. Boater names a water that is not known to be infested with zebra mussels – GO TO 4.

3. How long was your boat moored there?

- A. > 1 day

High Risk Vessel. Decontaminate vessel and trailer by removing aquatic vegetation, visible zebra mussels, emptying live wells, draining bilge water, and other sources of water, and disposing bait if it came from zebra mussel infested waters. Vegetation and water will be disposed of in an area where it will not come into contact with the Allegheny Reservoir or Allegheny River. Also, be sure to visually inspect the hull for attached juvenile zebra mussels, evidenced by a gritty looking grayish or brownish coating. In addition, with the boat owners permission, thoroughly inspect the hull for a gritty feel. . If the hull appears to have juvenile mussels attached, offer 2 options: 1) Clean the boat as indicated below, or 2) Do not launch. To clean the boat do one of the following: 1) thoroughly spray the vessel using the portable wash station, 2) direct the boat owner to the nearest car wash and instruct the boat operator on how to spray the vessel to decontaminate it, or 3) thoroughly scrub the hull until no grittiness is felt.

Regardless of the option selected, the Forest Service will re-inspect the boat prior to launching if the boat owner remains at the launch site or returns to a launch facility with an inspector on duty.

B. < 1 day

Low/Moderate Risk Vessel. Primary concern is aquatic vegetation. Decontaminate vessel and trailer by removing aquatic vegetation, as well as emptying live wells, draining bilge water, and other sources of water, and disposing bait if it came from zebra mussel infested waters. Visible zebra mussels should not be attached due to lack of time in the water. Vegetation and water will be disposed of in an area where it will not come into contact with the Allegheny Reservoir or Allegheny River. Also, be sure to visually inspect the hull for attached juvenile zebra mussels, evidenced by a gritty looking grayish or brownish coating. In addition, with the boat owners permission, thoroughly inspect the hull for a gritty feel. If the hull appears to have juvenile mussels attached, offer 2 options: 1) Clean the boat as indicated below, or 2) Do not launch. To clean the boat do one of the following: 1) thoroughly spray the vessel using the portable wash station, 2) direct the boat owner to the nearest car wash and instruct the boat operator on how to spray the vessel to decontaminate it, or 3) thoroughly scrub the hull until no grittiness is felt. Regardless of the option selected, the Forest Service will re-inspect the boat prior to launching if the boat owner remains at the launch site or returns to a launch facility with an inspector on duty.

4. Has your boat ever been in any infested waters (inspectors will inform the boater of the locations and/or show them a map)?

A. No

Low Risk Vessel. Boat is safe to launch. Advise boater of ways to minimize risk of transporting ANS, and have any visible vegetation removed.

B. Yes

When?

Where has the boat been since that time?

The objective of these questions is to determine whether or not the boat had been dry at least 5 days since exposure to infested waters. If it has been dry at least 5 days, it represents a low-risk vessel and is safe to launch.

If the vessel hasn't been dried at least 5 days since exposure to infested waters, or if this is unknown, it is a moderate-risk vessel. Decontaminate vessel and trailer by removing aquatic vegetation, emptying live wells, draining bilge water, and other sources of water, and disposing bait if it came from zebra mussel infested waters. Vegetation and water will be disposed of in an area where it will not come into contact with the Allegheny Reservoir or Allegheny River. Also, be sure to visually inspect the hull for attached juvenile zebra mussels, evidenced by a gritty looking grayish or brownish coating. In addition, with the boat owners permission, thoroughly inspect the hull for a gritty feel. . If the hull appears to have juvenile mussels attached, offer 2 options: 1) Clean the boat as indicated below , or 2) do not launch. To clean the boat do one of the following: 1) thoroughly spray the vessel using the portable wash station,

2) direct the boat owner to the nearest car wash and instruct the boat operator on how to spray the vessel to decontaminate it, or 3) thoroughly scrub the hull until no grittiness is felt. Regardless of the option selected, the Forest Service will re-inspect the boat prior to launching if the boat owner remains at the launch site or returns to a launch facility with an inspector on duty.

All boaters (regardless of vessel risk) should be given educational materials, and an explanation and request for their cooperation in self-inspection; removing plant material; and draining live wells, bilge water and other sources of water from their vessels.

Additional information (Exhibit 10) will be gathered from the boat user to be combined with all questionnaire responses for determining the overall risk of zebra mussel contamination to the Allegheny Reservoir and Allegheny River from boats.

Forest Service inspectors will report to the USFWS within 24 hours those boaters:

- That by-pass the screening/inspection process.
- Who will not allow us to feel the hull of their boat after the screening process has determined that their boat is a moderate or high risk, even though the boat has no indicators of zebra mussels.
- That do not decontaminate their boat after it was determined through the screening process that the boat was a moderate or high risk and the boat showed evidence of either adult or juvenile zebra mussels, or aquatic vegetation that may harbor zebra mussels.

Launch Sites With Self-Service Collection Facilities

There are two launch sites (Webb's Ferry and Roper Hollow) with self-service only collections, and four launch sites with staffed fee stations that operate on a self-service basis on a variable schedule during non-peak hours. The primary means of disseminating information to launch users is by public information posted on information boards. Forest Service screeners/inspectors will make periodic inspection of boats during non-peak launch times (Exhibit 8). Additionally, during the peak boating season, each boat launch will have at least one full weekday and one full weekend day staffed by a Forest Service inspector to assess normal boat launching traffic and risk of contamination (Exhibit 8). Self-service collection facility procedures are as follows:

Boaters are directed by a sign at the self-service fee station to complete the parking permit (Exhibit 9). The parking permit will contain the zebra mussel self-screening questions and screening/risk determination questionnaire. The questionnaire will be completed by the boat operator and returned in the parking permit envelope with the fee. The self-screening question form also refers the boat operator to the information board at the ramp site for additional information on zebra mussels (poster), regional map of infested waters, and car wash locations. Zebra mussel brochures and watch cards are available in the parking permit box.

Forest Service and concessionaire personnel visit each of these sites at least once per day to check for fee compliance. During this visit, non-payment reminders and self-screening questions along with brochures will be placed on windshields of vehicles where payment has not yet occurred

Forest Service screeners/inspectors will make spot inspections at these launch sites on a rotating schedule (Exhibit 8) during non-peak launch times. The inspector will perform the same

screening procedures on boats as described above for staffed collection facilities, and record contact information on the Zebra Mussel Screening Form (Exhibit 10).

Launch Sites Where Fees Are Not Collected

There are four sites where launch fees are not required. Two of the sites (Sugar Bay and Dunkle Corners) are undeveloped boat access sites. The launches consist of old roadbeds that extend into the reservoir. Primary use at these sites is from canoes and small boats (less than 18'). Information boards with the zebra mussel poster, regional map of infested waters, and car wash locations are located at each site. Forest Service screeners/inspectors will visit these sites and perform the same screening procedures on boats as described previously for staffed collection facilities, and record contact information on the Zebra Mussel Screening Form (Exhibit 10). Additionally, during the peak boating season, each boat launch will have at least one full weekday and one full weekend day staffed by a Forest Service inspector to assess normal boat launching traffic and risk of contamination (Exhibit 8).

Boat launch facilities are available at the Dewdrop campground. The launch is used only by campers at Dewdrop and is not available for other public use. Concessionaire employees will pass out the zebra mussel brochure, watch card, and self-screening questions to all campers that register with a boat.

Buckaloons boat launch is located on the Allegheny River within the Buckaloons campground. It is open for public use. Primary use at this site is from canoes and other small boats (less than 18 feet). Brochures and self-screening questions will be distributed to campers with boats by the campground host who is present evenings, weekends, and holidays. Information boards with the zebra mussel poster, regional map of infested waters, and car wash locations are located at this site.

Forest Service screeners/inspectors will make spot inspections at Dewdrop and Buckaloons launch sites on a rotating schedule (Exhibit 8) during non-peak launch times and will perform the same screening procedures on boats as described above for staffed collection facilities, and record contact information on the Zebra Mussel Screening Form (Exhibit 10).

A Forest Service screener/inspector will provide zebra mussel information and do a pre-season inspection of all canoes at commercial canoe liveries that launch at Buckaloons on the Allegheny River.

Boat Hull Wash Station Information

Operators of at-risk boats will be given the option of cleaning their boat or not launching. To clean their boat, owners will be directed to physically remove any visible mussel contamination from the vessel prior to launching. This includes not only zebra mussels, but aquatic vegetation, water in live wells, bilge water, etc. The physical removal of zebra mussels and aquatic vegetation by boat owner/operators will be the primary method used as recommended by the Sea Grant. The cleaning process will also include the washing of the boat hull to remove possible juvenile zebra mussels that aren't visible. A gritty hull, evidence of juvenile zebra mussels, will be cleaned by: 1) spraying water on the hull of at least 140°F at 200-300 psi at the portable wash station to kill mussels; or 2) spraying at a car wash with specifications equivalent to the National Voluntary Guidelines; or 3) thorough scrubbing of the boat hull until smooth. If a wash station is not present, the Forest Service inspector will instruct the boat owner/operator exactly how to do the decontamination (e.g. scrubbing or car wash). The Forest Service will re-inspect the boat prior to launching, if the boat owner returns to a launch facility with inspectors on duty.

When the Forest Service portable wash station is on-site, the Forest Service employee will offer as an option to wash the boat hull. There will be no fees charged for this service at this time. Additionally, directions to the closest car wash, as well as the full listing of car washes in close proximity to the ANF will be available at information boards at each boat launch, from Forest Service personnel and concessionaire employees on site, and from any Forest Service office.

The wash station will be located in an area that water will infiltrate into the ground to prevent contamination of the reservoir and to provide for public safety.

The chart on the following page provides location information on car washes in the local area that meet the guidelines established in the draft National Voluntary Guidelines. Listing here does not imply endorsement or promotion by the Allegheny National Forest. Boat owners will be responsible for all costs. If additional facilities exist that are not included, they can be added to this list.

ALLEGHENY RESERVOIR (northwest) Webbs Ferry Roper Hollow	ALLEGHENY RES. (northeast) Willow Bay Sugar Bay	ALLEGHENY RES. (south) Dunkle Corners Kiasutha, Dewdrop Elijah Run Wolf Run Marina	ALLEGHENY RIVER Buckaloons	ANF GENERAL AREA Irwin Run Beaver Meadows
Warren Auto Spa Bubble Wash 6 Follett Run Rd. 814-726-3110	Bradford Auto Spa Bubble Wash 251 W. Washington St. 814-362-1991	Kane The Classic Car Wash N. Fraley St. 814-837-7781	Warren Auto Spa Bubble Wash 6 Follett Run Rd. 814-726-3110	Ridgway Allos Car N. Broad St. 814-772-2656
Warren North Warren Car Wash 626 S. State St. 814-726-3514	Bradford Quick Way Car Wash 171 Seaward Ave. 814-368-6632	Weldbank Johnson's Keystone Route 6 814-723-3950	Warren North Warren Car Wash 626 S. State St. 814-726-3514	Ridgway Westside Car Wash Bottom of Mt Morenci Hill 814-772-2656
Jamestown (NY) Gary & Suzie Car Wash 1405 Washington St. 716-487-0290	Bradford Pro Wash 9 Bolivar Dr. 814-362-7110	Youngsville Car Wash Route 6 814-726-3514	Marienville Marienville Car Wash Route 66 (814)-927-5136	Tidionite Country Clean Laundry/Car Wash Main St. 814-563-7146
			Clarion Downtown Car Wash 629 Main St. 814-226-0603	Tionesta Car Wash 315 Williams St.
				Clarion East End 4 Fairview Ave. 814-226-4660

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APPENDIX B

REVIEW OF BIOLOGICAL OPINION ITEMS

A thorough review of the Biological Opinion has been made to determine what action is needed to implement items included as Reasonable and Prudent Alternatives, Reasonable and Prudent Measures, Terms and Conditions, and Conservation Recommendations. This review finds that:

- Two of the three Reasonable and Prudent Alternatives (Numbers 1 and 3) suggest reasonable solutions for consideration in reducing the risk of further jeopardy to the continued existence of the Northern Riffleshell mussel. Reasonable and Prudent Alternative 2 is actually the same as Alternative 1 and differs only with respect to the time frame of implementation, therefore it will not be considered as an Alternative in the Forest Plan amendment.
- The Reasonable and Prudent Measures as listed in the BO do not define standards or guidelines, but rather give a more general description of ANF responsibilities with regard to Bald eagle, Indiana bat, Clubshell mussel and Northern Riffleshell mussel.
- Terms and Conditions set forth in the BO can all be implemented under existing Forest Plan direction without conflict. However, several terms and conditions define more stringent standards than what are currently embodied within the Forest Plan. These terms and conditions should be considered as needed modifications to Forest Plan standards and guidelines in an amendment. Several terms and conditions define situations where additional consultation would be required such that standards and guidelines could be identified. These will be proposed for inclusion in the ANF Conservation Program. And finally, there are several terms and conditions that are operational in nature and are included within the framework of existing administrative program management that would be inappropriate to identify as a standard and guideline.
- All Conservation Recommendations, save one, will be included in the ANF Conservation Program. There is one conservation recommendation that will be proposed as a new standard and guideline in the amendment.

The following four tables display information from the Biological Opinion and the Forest Plan. Column one displays the items included in the Biological Opinion as Reasonable and Prudent Alternatives (Table 1), Reasonable and Prudent Measures (Table 2), Terms and Conditions (Table3), and Conservation Recommendations (Table 4). Column two displays the existing Forest Plan standard and guideline (if applicable). Column three displays the disposition for each item from the Biological Opinion.

There are three possibilities for disposition -

- A - amend Forest Plan with new or modified Standard and Guideline, or change in the Monitoring Plan.
- B - consider as an alternative in EIS for amendment
- C - implement under existing Forest Plan direction

The Forest Plan defines a standard as "A principle requiring a specific level of attainment, a rule to measure against", and a guideline as "An indication or outline of policy or conduct". These definitions were used as the basis for determining the disposition of the terms and conditions.

ANF personnel are developing a Conservation Program for Threatened and Endangered Species on the Allegheny National Forest. The items included here will be made a part of that plan, such that one, comprehensive plan for T&E management can be made and utilized in the future.

TABLE 1. REASONABLE AND PRUDENT ALTERNATIVES

	Dispo-sition
Alternative 1 - The Forest Service must reduce significantly the risk of zebra mussel introduction due to operation of its boating facilities.	
The following components of Reasonable and Prudent Alternative 1 are necessary to ensure that the operation of Forest Service boating facilities reduces, to the maximum extent possible, the introduction of zebra mussels within the middle Allegheny River:	
1. By July 1, 1999, the following measures shall be implemented: a. Educational materials (e.g., brochures) regarding the threats posed by zebra mussels, the means of zebra mussel transport, and procedures for decontaminating vessels shall be made available to persons using the marina and boat launches on the Allegheny Reservoir and Allegheny River, and b. Signs shall be posted at the marina and boat launches on the Allegheny Reservoir, and at the boat launch on the Allegheny River (at Buckaloons) prohibiting the launching of vessels that may be carrying zebra mussels, unless such vessels have been decontaminated.	C
<i>Rationale - Does not require Forest Plan amendment for implementation. These actions were implemented on schedule during the summer 1999 recreation season.</i>	
2. By August 1, 1999, the Forest Service shall begin conducting spot-checks of boat owners to ensure compliance with the signage posted as part of measure 1.b.	C
<i>Rationale - Does not require Forest Plan amendment for implementation. This action was implemented on schedule during the summer 1999 recreation season.</i>	
3. By April 1, 2000, the following measures shall be implemented: a. Prior to using the Forest Service marina or boat launches on the Allegheny Reservoir, boats shall be screened for potential zebra mussel contamination, and all boats found through screening to be at risk shall be decontaminated using a Service-approved decontamination method. These same procedures shall apply to commercial use of the boat launch at the Buckaloons Recreation Area on the Allegheny River. The screening method(s) and procedures (e.g., written questionnaire, visual inspection by qualified, trained personnel); decontamination method(s) and procedures; and decontamination facility location(s) are subject to review and approval by the Fish and Wildlife Service.	B

TABLE 1. REASONABLE AND PRUDENT ALTERNATIVES

Disposition			
	<p>b. Administrative procedures for operation of the marina and/or boat launches on the Allegheny Reservoir by a private entity (e.g., via a Forest Service special use permit) shall include the stipulation that zebra mussel screening and decontamination procedures be followed; significant penalties shall be imposed if procedures are not followed. Periodic checks by Forest Service personnel on the entity administering the marina and boat launches will be conducted to ensure compliance.</p> <p>c. Zebra mussel educational materials (subject to review by the Service) shall continue to be made available to boaters using the marina and boat launches on the Allegheny Reservoir, and the signs put in place as part of measure 1b shall remain in place.</p> <p>d. At canoe access sites and the boat launch at Buckaloons, the Forest Service shall establish educational displays and/or provide educational materials explaining: a) the risk (e.g., economic, ecological) posed by zebra mussels, b) methods of zebra mussel transport, c) how to tell if a boat poses a risk (i.e., might be carrying zebra mussels), d) a list of known zebra mussel infested waters (e.g., Lake Erie), and e) methods and availability of decontamination. The Forest Service shall also make the decontamination station(s) at the Allegheny Reservoir and/or elsewhere on the ANF available to entities using these boating facilities. Educational displays and materials will be subject to review and approval by the Service, and will be in place by April 1, 2000.</p>		
	<p><i>Rationale - Consider as an alternative in analysis for the Forest Plan amendment.</i></p> <p>4. Because several Zebra mussel monitoring stations are already located on the Allegheny Reservoir and Allegheny River, but are run by other agencies or entities, the Forest Service will only be required to conduct monitoring if monitoring efforts by these agencies/entities are discontinued or significantly curtailed.</p>		
		<p><i>Rationale - Does not require Forest Plan amendment for implementation. Will be implemented if required by FWS in the future.</i></p> <p>5. The Forest Service shall, in cooperation with the Fish and Wildlife Service and others (e.g., the U.S. Army Corps of Engineers, Pennsylvania Fish and Boat Commission, etc.) assist in developing and implementing contingency plans and protocols for zebra mussel control and/or native mussel species protection in the event of zebra mussel incursions.</p>	

Rationale - Does not require Forest Plan amendment for implementation. Will be implemented as part of inter-agency coordination efforts in ANF Conservation

TABLE 1. REASONABLE AND PRUDENT ALTERNATIVES*Program.*

		Dispo-sition
Alternative 2: The Forest Service must significantly reduce the likelihood of zebra mussel introduction due to the operation of its boating facilities by closing all of its boating facilities located on the Allegheny River, Allegheny Reservoir, and Allegheny River tributaries until such time as all of the measures under Reasonable and Prudent Alternative 1 have been implemented.		B
<i>Rationale - This alternative requires the same changes as in Alternative 1 above and differs only in terms of timing of implementation. It will not be addressed as a separate alternative in the amendment analysis.</i>		

Alternative 3: The Forest Service must avoid the possibility of zebra mussel introduction due to operation of its boating facilities by permanently closing all of its boating facilities located on the Allegheny River, Allegheny Reservoir, and Allegheny River tributaries.

Rationale - Consider as an alternative in analysis for the Forest Plan amendment.

TABLE 2. REASONABLE AND PRUDENT MEASURES

Bald Eagle		
1. Bald eagle buffer zones and restrictions associated with those zones shall be implemented to ensure the protection of active nests and nesting eagles.		B
2. The Forest Service shall continue its efforts to identify bald eagle roosting areas on the ANF, and shall implement measures to protect such areas.		
3. The Forest Service shall implement measures to reduce the likelihood of accidental take of bald eagles due to recreational activities.		
4. The Forest Service shall further consult with the Fish and Wildlife Service on specific activities which may affect bald eagles.		
Indiana Bat		

TABLE 2. REASONABLE AND PRUDENT MEASURES

<ol style="list-style-type: none"> 1. Proposed management activities shall be planned, evaluated, and implemented consistent with measures developed to protect the Indiana bat including those recognized to maintain, improve, or enhance its habitat. These non-discretionary measures include, but are not limited to, current standards and guidelines found in the Allegheny National Forest Land and Resource Management Plan and amendments, and terms and conditions outlined in this opinion. 2. The Forest Service shall monitor timber sales and other activities on the ANF to determine if Forest Plan standards and guidelines, and the terms and conditions of this opinion are being implemented. 3. The Forest Service shall determine use of the ANF by Indiana bats during hibernation, summer roosting, maternity, and pre-hibernation seasons. 		
<p>Clubshell and Northern Riffleshell</p> <ol style="list-style-type: none"> 1. Proposed management activities shall be planned, evaluated, and implemented consistent with measures developed to protect the Clubshell and northern Riffleshell including those recognized to maintain, improve, or enhance its habitat. These non-discretionary measures include, but are not limited to, current standards and guidelines found in the Allegheny National Forest Land and Resource Management Plan and amendments, and terms and conditions outlined in this opinion. 2. Within the portion of the ANF that drains into the Allegheny River, the Forest Service will monitor timber sales, oil and gas activity, and other activities that could possibly degrade water quality to determine if these measures are being implemented and if water quality degradation occurs. 	<p><i>Rationale - The reasonable and prudent measures define ANF responsibility towards Bald eagle, Indiana bat, Clubshell mussel and Northern Riffleshell mussel. Specific standards and guidelines are not defined in this section. Terms and conditions (displayed on Table 3,) referred to here, will be the basis for standard and guideline changes.</i></p>	

TABLE 3. TERMS AND CONDITIONS

EXISTING FOREST PLAN REFERENCE	Disposition
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TABLE 3. TERMS AND CONDITIONS

BALD EAGLE	EXISTING FOREST PLAN REFERENCE	Disposition
<p>1. To minimize the likelihood of take of nesting eagles, the following buffer zones and time-of-year restrictions shall apply to bald eagle nests, including those abandoned for ≤ 3 years.</p> <p>a. Year-round, all activities that may disturb eagles or significantly alter habitat, including, but not limited to, timber harvesting; land clearing; federal oil and gas development; road construction and operation; and trail construction and operation; shall be prohibited within a zone extending at least 660 feet from the nest (except when implemented in compliance with Term and Condition 4a, below). This prohibition does not apply to the implementation of measures that are necessary to protect or monitor the nest.</p> <p>b. From January 15 to July 31 of each year, people and aircraft should not be allowed within 660 feet of the nest. This distance should be increased if topography and/or vegetation permit a direct line-of-sight from the nest to potential activities. This prohibition does not apply to qualified persons conducting necessary eagle research and management.</p> <p>c. From August 1 to January 14 of each year, hunting, fishing, and other recreational activities are allowable within 660 feet of the nest; however, these activities should be restricted within 330 feet of the nest.</p>	<p><i>Rationale - Amend Forest Plan standards and guidelines to conform with terms and conditions. Terms and conditions are quite similar to existing standards and guidelines (S&G's), however they provide clearer direction than do the existing S&G's.</i></p> <p><i>2. To minimize the likelihood of take of roosting bald eagles, the Forest Service shall continue its efforts to identify and protect bald eagle roosting areas on the ANF. Activities that may result in the take of roosting eagles or degradation of roosting habitat shall be restricted within 0.25 mile (1,320 feet) of identified roosting sites (except when implemented in compliance with Term and Condition 4a, below).</i></p> <p><i>Rationale - Amend Forest Plan standards and guidelines to conform to this term and condition. Term and condition is similar to existing S&G, however this provides clearer direction and adds requirement to protect roosting areas.</i></p>	<ul style="list-style-type: none"> - Identify and manage potential nest trees in suitable locations for the bald eagle and osprey - The guidelines to protect selected birds during the nesting season are the following: <ul style="list-style-type: none"> - Prohibit disturbances within approximately 330 feet of each existing nesting location, except those necessary to protect the nest or colony. - Prohibit significant changes in the landscape within 660 feet of each existing nesting location. - Local roads will be closed to the public where active nests are located. - The species included here and their critical time periods are the following: <ul style="list-style-type: none"> Bald Eagle - February 1 to July 31. Reference: Forest Plan, pages 4-37-39
		A

TABLE 3. TERMS AND CONDITIONS

EXISTING FOREST PLAN REFERENCE	Disposition
3. The Forest Service shall implement measures to reduce the likelihood of bald eagle death or injury due to hunting and fishing-associated activities.	C
a. Discarded fishing line and lures shall be cleaned up monthly from May through September at developed fishing access sites on and near the Allegheny Reservoir.	
b. Signs and/or news releases shall be displayed or distributed to educate hunters not to shoot eagles.	
<i>Rationale - Does not require Forest Plan amendment for implementation. Will be implemented beginning in the 2000 recreation season.</i>	
4.Ongoing and proposed activities which could potentially affect bald eagles, and are therefore subject to further consultation, include the following:	C
a. Activities within a 0.5-mile radius of bald eagle nests (including those abandoned \leq 3 years), and activities within a 0.25-mile radius of identified bald eagle roosting areas. Such activities include, but are not limited to: timber harvesting; road construction, maintenance and operation; trail construction, maintenance and operation; aerial application of herbicides or pesticides; federal oil and gas development; and construction and operation of boat launches.	
b. The proposed installation and operation of any new access sites (e.g., recreational, boating) within the Allegheny Wild and Scenic River corridor. Bald eagle use of habitat within one mile of each proposed access site shall be assessed, and the potential direct and indirect effects of the access site on the eagle(s) evaluated.	
c. Recreational use of the Allegheny Reservoir. Determine the levels of activity (particularly boating-associated activity) on and near the Allegheny Reservoir and the effects on nesting and foraging bald eagles (particularly the Conimbrancer and Kinzua nests). If any adverse effects are noted or suspected, remedial actions shall be implemented by the Forest Service, the Fish and Wildlife Service will be contacted, and further consultation will be required to determine if recreational access should be restricted.	
<i>Rationale - Include in ANF Conservation Program. Terms and conditions for these kinds of situations have not been defined, hence the need to develop new standards and guidelines does not pertain. Informal consultation with FWS is ongoing.</i>	

TABLE 3. TERMS AND CONDITIONS

INDIANA BAT

1. Timber harvesting and other management activities shall be implemented in accordance with Forest Plan standards and guidelines, and the terms and conditions of this opinion. In addition to Forest Plan standards and guidelines, the following terms and conditions apply to timber management on the ANF:

a. Retain all slab bark and shellbark hickories (live, dead, and dying), regardless of size, in partial and final harvest cutting units (green and salvage units).

Rationale - No need to amend Forest Plan. Term and condition is an existing S&G

b. For both partial and final harvests in green units (harvested material consists primarily of live, healthy trees) retain all snags. Retain at least 8-15 live trees ≥ 9 inches d.b.h. per acre in final harvest units, and at least 16 live trees ≥ 9 inches d.b.h. per acre in partial harvest units.

c. For both partial and final harvests in salvage units (dead or dying trees make up 50 percent or more of the harvested volume), and clearcuts, retain at least 5-10 snags ≥ 9 inches d.b.h. per acre, and of these one snag ≥ 16 inches d.b.h. per two acres. Also retain at least 16 live trees ≥ 9 inches d.b.h. per acre, and 3 live trees ≥ 20 inches d.b.h. per acre in partial harvest units; and retain at least 8-15 live trees ≥ 9 inches d.b.h. per acre, and 1 live tree ≥ 20 inches d.b.h. per acre in final harvest units and clearcuts.

d. For partial/intermediate harvests (e.g., thinnings, shelterwood seed/prep, selection puts) in healthy stands (stands where volume being removed is predominantly healthy, living trees), reduce canopy closure to >54 percent. *

e. Designate and retain living residual trees in the vicinity of about 1/3 of all large diameter (≥ 12 inches d.b.h.) snags with exfoliating bark to provide them with partial shade in summer.

f. Live residual trees to be retained under these terms and conditions shall, where available, be Class 1 or Class 2 trees (as identified by Romme et al 1995), or other trees exhibiting or likely to develop characteristics preferred by Indiana bats (e.g., exfoliating bark).

*Following informal consultation with FWS in July, 1999, this term and condition was changed to $\geq 50\%$

TABLE 3. TERMS AND CONDITIONS		EXISTING FOREST PLAN REFERENCE	Disposition
INDIANA BAT			
1. Timber harvesting and other management activities shall be implemented in accordance with Forest Plan standards and guidelines, and the terms and conditions of this opinion. In addition to Forest Plan standards and guidelines, the following terms and conditions apply to timber management on the ANF:			
a. Retain all shagbark and shellbark hickories (live, dead, and dying), regardless of size, in partial and final harvest cutting units (green and salvage units).		Retain all hickory and sweet gum where they occur (FP 4-6)	C
<i>Rationale - No need to amend Forest Plan. Term and condition is an existing S&G</i>			
b. For both partial and final harvests in green units (harvested material consists primarily of live, healthy trees) retain all snags. Retain at least 8-15 live trees ≥ 9 inches d.b.h. per acre in final harvest units, and at least 16 live trees ≥ 9 inches d.b.h. per acre in partial harvest units.	<u>Snags</u>	Forest-wide standards and guidelines (Forest Plan 4-32) Leave an average of 5-10 snags per acre. Leave snags in all commercial and non-commercial cuts. In clearcuts leave snags in hollows and along borders.	
c. For both partial and final harvests in salvage units (dead or dying trees make up 50 percent or more of the harvested volume), and clearcuts, retain at least 5-10 snags ≥ 9 inches d.b.h. per acre, and of these one snag ≥ 16 inches d.b.h. per two acres. Also retain at least 16 live trees ≥ 9 inches d.b.h. per acre, and 3 live trees ≥ 20 inches d.b.h. per acre in partial harvest units; and retain at least 8-15 live trees ≥ 9 inches d.b.h. per acre, and 1 live tree ≥ 20 inches d.b.h. per acre in final harvest units and clearcuts.		Management Areas 2 and 6.1 Forest Plan 4-73, 113 Retain the following snags per acre: 10" to 16" dbh 3 snags 18" to 24" dbh 3 snags	
d. For partial/intermediate harvests (e.g., thinnings, shelterwood seed/prep, selection puts) in healthy stands (stands where volume being removed is predominantly healthy, living trees), reduce canopy closure to >54 percent. *		Management Areas 3, 6.2 and 6.3 Retain 5 snags per acre	
e. Designate and retain living residual trees in the vicinity of about 1/3 of all large diameter (≥ 12 inches d.b.h.) snags with exfoliating bark to provide them with partial shade in summer.	<u>Den Trees</u>	Forest-wide standards and guidelines (FP 4-32) In intermediate cuttings retain up to 3 trees per acre with nesting cavities. Where an inadequate number of live trees occur, retain old large trees, especially those with old wounds and broken limbs.	
f. Live residual trees to be retained under these terms and conditions shall, where available, be Class 1 or Class 2 trees (as identified by Romme et al 1995), or other trees exhibiting or likely to develop characteristics preferred by Indiana bats (e.g., exfoliating bark).		In clearcuts, leave small clumps of 6-15 trees with nesting cavities, potential den trees, along with conifers and mast producing species	
*Following informal consultation with FWS in July, 1999, this term and condition was changed to $\geq 50\%$			

TABLE 3. TERMS AND CONDITIONS

EXISTING FOREST PLAN REFERENCE	Disposition
In clearcuts, leave small clumps of 6-15 trees with nesting cavities, potential den trees, along with conifers and mast producing species. Retain a clump of approximately 75 trees (1/4 acres) within each 5 acres of regeneration cut. Management Areas 2, 6.1 and 6.2 - Provide 3-5 trees with nesting cavities per acre with a minimum dbh of 14". Management Area 3 - Provide 4-6 live den trees per acre with a minimum dbh of 14" in the oak type	A
<i>Rationale - Amend Forest Plan standards and guidelines to conform with terms and conditions. Terms and conditions are quite similar to existing S&G's, however they provide additional tree diameter requirements that differ from existing S&G's and set canopy closure requirements. All timber sale units currently under contract have been assessed to determine if they are in compliance with this requirement. Modifications have been made as needed.</i>	
2. In order to minimize incidental take of roosting bats, all known roost trees on the ANF will be protected until such time as they no longer serve as a roost (e.g., loss of exfoliating bark or cavities, blown down, or decay). In the event that it becomes absolutely necessary to remove a known Indiana bat roost tree, such a removal will be conducted through consultation with the Service, during the time period when the bats are likely to be in hibernation (November 15 through March 31). Trees identified as immediate threats to public safety may, however, be removed at any time following consultation with the Fish and Wildlife Service. Such removal, however, will be as a last resort, after other alternatives (such as fencing the area, etc.) have been considered and deemed unacceptable.	None
<i>Rationale - Develop new Forest Plan standards and guidelines to include term and condition. Existing S&G's do not include this kind of protection.</i>	
3. Activities within a 1.5-mile radius of Indiana bat maternity sites shall be subject to further consultation. Such activities include those that may affect the Indiana bat or alter its habitat (e.g., by removing potential roost trees or altering percent canopy closure), such as timber harvesting, road construction, trail construction, and federal oil and gas development. In addition, if an Indiana bat maternity site is found on ANF, the Forest Service shall consult with the Fish and Wildlife Service to determine/develop standards and guidelines and/or a conservation plan to protect and manage the site.	C
<i>Rationale - Include in ANF Conservation Program. Terms and conditions for these kinds of situations have not been defined, hence the need to develop new standards and guidelines does not pertain. Informal consultation with FWS is ongoing.</i>	

TABLE 3. TERMS AND CONDITIONS

EXISTING FOREST PLAN REFERENCE	Disposition
<p>4. Monitoring of timber sales and other activities will be implemented as follows:</p> <p>a. Timber sale administrators or biologists will conduct and report the results of inspections of all timber sales on the ANF to ensure that terms and conditions related to timber harvesting have been implemented. Timber sale administrators will conduct inspections of all timber sales to administer provisions for protecting residual trees. (Residual trees are those trees not designated for cutting under provisions of the timber sale contract.) Damage to residual trees will be documented in inspection reports and proper contractual or legal remedies will be sought. The ANF will include this information in their annual monitoring reports. The ANF will make these reports available to the Fish and Wildlife Service, if requested.</p> <p>b. Monitor percent canopy closure pre- and post-harvest, and the number of residual trees (i.e., snags, den trees, and live trees) per acre remaining on at least 10 final harvest units and 10 partial harvest units per year (including some green units and some salvage units) and report these data to the Fish and Wildlife Service. These data shall be collected within 3-6 months following harvest, and shall be reported to the Fish and Wildlife Service within 3 months of collection.</p> <p>c. Determine the longevity of snags, den trees, shagbark hickories (live and dead), and other live residual trees remaining within 10 final and 10 partial harvest units (including both green and salvage units) by monitoring the number of each remaining per acre at intervals of 1, 3, 5, 7, and 10 years post-harvest. For the purposes of this monitoring study, the same harvest units shall be monitored during each time interval. These data shall be reported to the Fish and Wildlife Service within 3 months of collection.</p>	None

Rationale - Include in ANF Conservation Program. These terms and conditions define a contract administration requirement and define post-harvest evaluations that will be implemented through administrative actions.

TABLE 3. TERMS AND CONDITIONS

EXISTING FOREST PLAN REFERENCE	Disposition
<p>5. The Forest Service will continue its efforts to determine use of the ANF by Indiana bats during the hibernation, summer roosting/maternity, and pre-hibernation seasons by implementing the following monitoring procedures. Selection of sites for future monitoring and surveys will be left to the discretion of the ANF biologists. The Service believes that implementation of the following terms and conditions is necessary to evaluate the underlying assumptions made about Indiana bat presence and use of the ANF. Implementation of these terms and conditions will, in turn, provide a more site-specific measure of the protective adequacy of Forest Plan standards and guidelines and the terms and conditions of this opinion for the Indiana bat on the ANF.</p> <p>a. Hibernacula. Continue working with universities, the Pennsylvania Game Commission, and local forest users to locate and survey caves that may contain Indiana bats. If Indiana bats are present, surveys shall continue biennially following the protocol of the Indiana Bat Recovery Team. After any gating of a hibernaculum, yearly surveys shall be conducted to determine the effects of the gate(s) on all bat species. This effort will be conducted for the first three years and then continue with the biennial monitoring recommended by the Indiana bat Recovery Team. In addition, if an Indiana bat hibernaculum is found on the ANF, consult with the Fish and Wildlife Service to determine standards and guidelines necessary to protect and manage the hibernaculum.</p> <p>b. Continue survey efforts to determine the extent of use of the ANF by Indiana bats; such surveys should include the employment of techniques to determine the distribution of the species on the National Forest, habitat use and movements of Indiana bats during the spring-fall periods, etc. Comparative evaluations of the effectiveness of mist net surveys and Anabat Detectors are strongly encouraged. If any Indiana bats (male or female) are netted, we recommend tracking them using radio-telemetry to identify and characterize roost trees and foraging habitat. These habitat parameters will be used to develop management strategies for the protection, maintenance, and promotion of foraging areas.</p>	None C

TABLE 3. TERMS AND CONDITIONS

EXISTING FOREST PLAN REFERENCE	Dispo-	
Sition		
<p>c. Conduct surveys to identify if and where Indiana bat maternity sites are located on the ANF. Surveys efforts should be focused on those areas which, based on habitat characteristics (e.g., percent canopy closure, presence or suitable roost trees, proximity to water, etc.) and/or previous survey results (e.g., Anabat detection), appear to be conducive to maternity colonies. Surveys should be done using the latest Fish and Wildlife Service-approved survey protocol and qualified surveyors. If any Indiana bats are netted, they should be tracked using radio-telemetry to identify roost trees and foraging habitat. The habitat at identified maternity sites will be characterized and quantified, and these habitat data will then be used to assist in identifying additional sites. Survey results shall be reported to the Fish and Wildlife Service. Some of these surveys shall be conducted in proposed timber harvest areas, especially in those areas where canopy closure will be reduced to <54 percent (e.g., final harvests such as clearcuts and shelterwood removal cuts). This is consistent with the Forest Service's requirement to "assess the occurrence of animal and plant species in all areas to be affected by land adjustment or resource management activities, and design action to avoid, minimize, or mitigate potential adverse effects" (Forest Plan, p. 4-37). The documented presence of Indiana bats within a project area shall subject that project to further consultation with the Fish and Wildlife Service.</p> <p>d. Habitat at all sites where Indiana bats are documented on the ANF should be characterized and quantified at both local and landscape levels using GIS and other advanced computer software.</p> <p>e. Upon completion of each survey, provide the results (within six months of survey/study completion) to the Fish and Wildlife Service's State College, Pennsylvania Ecological Services Field Office.</p> <p>f. The amount of incidental take (both total and categorical levels, as measured indirectly by acreage) as identified in this opinion must be monitored on an annual basis. This information is to be provided to the Fish and Wildlife Service's State College, Pennsylvania Ecological Services Field Office no later than six months following the end of the previous year's activities.</p> <p><i>Rationale - Include in ANF Conservation Program. These terms and conditions define inventory and assessment needs that will be completed through administrative actions. Information will be provided to FWS on an annual basis.</i></p>	None	C

TABLE 3. TERMS AND CONDITIONS

EXISTING FOREST PLAN REFERENCE	Disposition
6.The ANF will consult with the Service on any plans to use B.t. to control gypsy moth or other forest pest insects. Reduction in non-target lepidopteron abundance will be considered when developing spraying plans, especially when determining the size and configuration of spray blocks.	C
<p><i>Rationale - Include in ANF Conservation Program. Terms and conditions for this action has not been defined, hence the need to develop new standards and guidelines does not pertain. Informal consultation with FWS is ongoing.</i></p>	
<p>CLUBSHELL AND NORTHERN RIFFLESHELL</p>	
<p>1. Consult with the Fish and Wildlife Service regarding the proposed installation and operation of any new access sites (e.g., recreational, boating) to be authorized, funded, or constructed by the Forest Service on the Allegheny River. Clubshell and northern Riffleshell use of habitat in the vicinity of such access sites shall be assessed, and the potential effects of the access site on the mussels shall be evaluated.</p>	None
<p><i>Rationale - Include in ANF Conservation Program. Terms and conditions for these kinds of situations have not been defined, hence the need to develop new standards and guidelines does not pertain. Informal consultation with FWS is ongoing.</i></p>	C
<p>2. A potential threat to the Clubshell and northern Riffleshell is water pollution from activities that may be occurring or will occur on the Forest. Because the pollutants that may effect endangered mussels are similar in nature, but the result of a number of different activities, the logical way to monitor and minimize the effects of these activities is to assess specific projects or types of projects, monitor water quality of tributaries to the Allegheny River, and re-mediate suspected causes of sedimentation through implementation of the terms and conditions below. Efforts should be focused on erosion and sedimentation problems occurring, or likely to occur, within the 13 percent of the ANF that drains directly into the Allegheny River.</p>	None

TABLE 3. TERMS AND CONDITIONS

EXISTING FOREST PLAN REFERENCE	Dispo- sition
a. Existing trails shall be surveyed to determine which trails or trail segments are contributing sediment to perennial or intermittent streams. Appropriate erosion and sedimentation controls shall be implemented to correct identified problem areas. A progress report shall be submitted to the Fish and Wildlife Service annually.	
b. Existing roads shall be surveyed to determine which road segments are contributing sediment to perennial or intermittent streams. Appropriate erosion and sedimentation controls (as identified in the BA, p. 77) shall be implemented to correct identified problem areas. A progress report shall be submitted to the Fish and Wildlife Service annually.	
<i>Rationale - Does not require Forest Plan amendment for implementation. Surveys were completed in summer 1999. Corrective action to improve problem areas has been implemented or is scheduled to occur.</i>	
c. Tree harvesting/removal activities shall continue to be monitored to ensure that standards and guidelines are in fact implemented and do in fact result in only insignificant amounts of transported sediment compared to areas where no earth disturbance takes place.	
Temporary roads and skid trails will be cross-drained to prevent erosion and sedimentation into streams. After use, all facilities including landings should be permanently closed and erosion controlled.	C
Landing should be located and designed so that sediment will settle out before runoff reaches watercourses.	
Sale layout will avoid, to the extent practical, the need for skidders to cross perennial and intermittent streams. Crossing by skidders will occur only at designated sites. A temporary crossing will be constructed to prevent degradation of stream banks and bed. No skidding or trucking is permitted down any portion of any stream or streambank.	

TABLE 3. TERMS AND CONDITIONS

EXISTING FOREST PLAN REFERENCE	Disposition
<p>A filter strip should be maintained to minimize the movement of silt, humus, and other organic matter into the stream. The standar width is 50 feet plus 2 feet for every one percent of slope adjacent to each side of the stream or the actual size of the riparian area, whichever is larger.</p> <p>Logging operations should maintain the existing structure and shape of stream banks. This includes maintaining trees that are providing streambank stability, trees growing within the channel and trees that have a high potential for providing in-stream woody material.</p> <p>A canopy of high and/or low shade should be provided along perennial streams. This should protect the streams from excessive exposure to direct sunlight that would increase temperatures above that tolerable to the existing fish species. for cold-water streams, water temperatures should have an average daily maximum \leq to 68 degrees Fahrenheit.</p> <p>No herbicide will be sprayed on any stream or spring seep. The following buffer strips will be established for all spray projects using ground application equipment:</p> <ul style="list-style-type: none">- a 75 foot buffer will be maintained along perennial streams, intermittent streams that have a flowing water on the day of spraying, and impoundments or lakes.- a 50 foot buffer will be maintained along intermittent streams not flowing water, and spring seeps that drain into streams.- a 25 foot buffer will be maintained around small seep areas that do not have an outflow channel draining to a stream.	<p><i>(Continued on next page)</i></p> <p><i>Rationale - Does not require Forest Plan amendment for implementation. Monitoring the effectiveness of timber harvest and reforestation activities occurs on an annual basis.</i></p>

TABLE 3. TERMS AND CONDITIONS

EXISTING FOREST PLAN REFERENCE	Disposition
d. Oil and gas development activities (including individual Pollution Prevention and Spill Response Plans) shall continue to be monitored to ensure that guidelines for Federally-owned leases are adhered to, and guidelines for privately-owned rights are adhered to. Appropriate action (e.g., reporting known or suspected violations to the Environmental Protection Agency and/or the Pennsylvania Department of Environmental Protection) will be taken when guidelines are not followed.	C
<p><i>Rationale - Does not require Forest Plan amendment for implementation. Monitoring the effectiveness of federal oil and gas development activities occurs on an annual basis.</i></p>	
e. The Forest Plan shall be revised to state that the standards and guidelines intended to protect water quality are mandatory and minimum requirements that are enforceable by the Forest Service. At a minimum, these standards and guidelines must be equivalent to State guidelines applicable in High Quality and Exceptional Value watersheds, and should reflect the best available measures for controlling erosion and sedimentation.	<p>Note – A comparison between S&G's and State guidelines was completed. The following S&G was found to be inconsistent with wording found in the State guidelines:</p> <p>Concerning perennial and intermittent streams:</p> <p>A filter strip should be maintained to minimize the movement of silt, humus, and other organic matter into the stream. A suggested width is 50 feet plus 2 feet for every one percent of slope adjacent to each side of the stream or the actual size of the riparian area, whichever is larger.</p>
<p><i>Rationale – Revise existing standard and guideline to be consistent with state guideline.</i></p>	A
f. Water quality monitoring stations (i.e., locations) shall be established on several tributaries to the Allegheny River immediately before those tributaries empty into the Allegheny River, with emphasis on determining sediment budgets for watershed with varying degrees of activities. The design of the study and placement of the stations should be coordinated with the Fish and Wildlife Service.	C
<p><i>Rationale - Does not require Forest Plan amendment for implementation. Monitoring stations were installed in the summer of 1999. Study design is being coordinated with FWS, with possible implementation in 2000 field season.</i></p>	

TABLE 4. CONSERVATION RECOMMENDATIONS

	EXISTING FOREST PLAN REFERENCE	Disposition
Bald Eagle		C
1. In cooperation with the Pennsylvania Game Commission (PGC), install predator guards on bald eagle nest trees.		
<i>Rationale - Include in ANF Conservation Program. Does not require Forest Plan amendment for implementation. This action has already been completed on known nest trees.</i>		
2. In cooperation with the Pennsylvania Game Commission, monitor known eagle nests and search for new ones. Provide monitoring data to the Fish and Wildlife Service annually, at the end of each breeding season. Notify the Fish and Wildlife Service and Pennsylvania Game Commission of the presence of any new eagle nests or failure of existing nests upon discovery.		C
<i>Rationale - Include in ANF Conservation Program. Does not require Forest Plan amendment for implementation. This is an on-going activity and will be continued through administrative action.</i>		
3. In order to assist the Service and the Pennsylvania Game Commission in monitoring the status of the bald eagle on the ANF during the five years following de-listing according to requirements outlined in the ESA, monitor the numbers and reproductive success of nesting and wintering bald eagles using the ANF and report the results of such surveys to the Service's State College, Pennsylvania Ecological Services Field Office and to the PGC.		C
<i>Rationale - Include in ANF Conservation Program. Does not require Forest Plan amendment for implementation. This will be accomplished as an administrative action when Bald eagle is de-listed.</i>		
Indiana Bat		
1. Follow interagency working group and/or Recovery Plan recommendations for inventory and monitoring Indiana bat habitat and populations across the forest.		C
<i>Rationale - Include in ANF Conservation Program. Does not require Forest Plan amendment for implementation. Already addressed under Indiana Bat Term and Condition 5c</i>		
2. Pursue additional funding and partnership opportunities to complete needed inventory and monitoring work.		C
<i>Rationale - Include in ANF Conservation Program. Does not require Forest Plan amendment for implementation.</i>		

TABLE 4. CONSERVATION RECOMMENDATIONS

	EXISTING FOREST PLAN REFERENCE	Disposition
3. Where opportunities exist, work with landowners, general public, and other agencies to promote education and information about endangered bats and their conservation.		C
<i>Rationale - Include in ANF Conservation Program. Does not require Forest Plan amendment for implementation.</i>		
4. The ANF hosts many visitors each year; therefore, the Service encourages the installation of informational/educational displays regarding all bats occurring on the ANF. The Service believes that such information would be invaluable in informing the public about the value of this misunderstood group of mammals. We also encourage the Forest Service to develop an educational slide program on the status of the Indiana bat and threats to its existence.		C
<i>Rationale - Include in ANF Conservation Program. Does not require Forest Plan amendment for implementation.</i>		
5. Provide training for appropriate ANF employees on bats (including Indiana bat) occurring on the ANF. Training should include sections on bat identification, biology, habitat requirements, and sampling techniques (including instructions on applicability and effectiveness of using mist net surveys vs. Anabat detectors to accurately determine the presence of various bat species). The proper training of ANF biologists on bat identification and reliable methods for counting roosting bats will enable the Forest Service to monitor the status of this species.	C	
<i>Rationale - Include in ANF Conservation Program. Does not require Forest Plan amendment for implementation.</i>		
6. Demolition or removal of buildings or other man-made structures that harbor bats should occur while bats are hibernating. If public safety is threatened and the building must be removed while bats are present, a bat expert should examine the building to determine if Indiana bats are present.	A	
<i>Rationale - Amend Forest Plan to include this term and condition as a standard and guideline.</i>		
Clubshell and Northern Riffleshell		
1. Cooperate with the Service, Pennsylvania Fish and Boat Commission, and others to conduct mussel surveys of the Allegheny River and its tributaries to further knowledge about the distribution and status of the Clubshell and Northern Riffleshell.	C	
<i>Rationale - Include in ANF Conservation Program. Does not require Forest Plan amendment for implementation.</i>		

TABLE 4. CONSERVATION RECOMMENDATIONS

EXISTING FOREST PLAN REFERENCE	Dispo-sition
2. Design (in coordination with the Fish and Wildlife Service), produce, and install an educational display about the aquatic resources (including endangered mussels) of the Allegheny River and threats to their existence, at the Forest Service's Buckaloons boat launch on the Allegheny River.	C
<i>Rationale - Include in ANF Conservation Program. Does not require Forest Plan amendment for implementation.</i>	
3. Continue to assess various standards and guidelines to determine their effectiveness in minimizing non-point source pollution. Periodically revise and update Forest Plan standards and guidelines to reflect the best available measures for controlling erosion and sedimentation.	C
<i>Rationale - Include in ANF Conservation Program. Does not require Forest Plan amendment for implementation</i>	
4. Encourage and work with other federal, state and private entities operating boat launches and marinas on the Allegheny Reservoir and Allegheny River to develop and implement education, outreach, and decontamination procedures and facilities to reduce the likelihood of zebra mussel introduction.	C
<i>Rationale - Include in ANF Conservation Program. Does not require Forest Plan amendment for implementation</i>	
All Federally Listed Species	
1. Secure subsurface rights (e.g., mineral, oil and gas rights) within areas on the ANF identified as important endangered and threatened species habitats. In order for the Fish and Wildlife Service to be kept informed of actions minimizing or avoiding adverse effects, or benefiting listed species or their habitats, we request notification of the implementation of any conservation recommendations.	C
<i>Rationale - Include in ANF Conservation Program. Does not require Forest Plan amendment for implementation</i>	

APPENDIX C

PUBLIC INVOLVEMENT

INTRODUCTION

Appendix C describes the public involvement process used during the development of this Environmental Impact Statement (EIS). The public has been given many opportunities to secure information and share their comments on the proposed action to assist the ID Team in this analysis. Following is a chronological list of the public involvement efforts including, news releases, requests for information by organizations and individuals, information disseminated through the NEPA Quarterly, the comment periods, and document releases.

CHRONOLOGY OF PUBLIC INVOLVEMENT EFFORTS

October, 1998	Eyes on the Allegheny article on Endangered Species and possible plan amendment.
January, 1999	Eyes on the Allegheny identified Plan Amendment for T&E as new project.
February 4, 1999	Scoping letter with proposed action sent to public –
February 5, 1999	News Release for Scoping –
February 8, 1999	Notice of Intent to prepare an EIS published in Federal Register
March 10, 1999	Scoping Comment Period Ends –
April, 1999	Eyes on the Allegheny updates T&E Amendment status
May 26, 1999	Preliminary bat survey report for 1998 sent to interested parties
June 24, 1999	New Release Biological Opinion received by ANF
July 1999	Eyes on the Allegheny with T&E article and status update
August 6, 1999	Request for TES correspondence provided
September 1, 1999	Request for BA and BO background info provided
October 1999	Eyes on the Allegheny updates T&E Amendment status
October 19, 1999	Request for Literature Cited in BE's provided
October 20, 1999	Request for species info and risk evaluations provided
November 2, 1999	Request for Literature Cited in BE's provided
December 16, 1999	Request for Literature Cited in BE's provided
December 20, 1999	Request for species info and risk evaluations provided
January 2000	Eyes on the Allegheny update on T&E Amendment status
February 9, 2000	Request for Literature Cited in BE's provided
March 1, 2000	News Release announcing availability of DEIS
March 1, 2000	DEIS with cover letter distributed to public
March 9, 2000	Draft bat survey report for 1999 sent to interested parties
March 10, 2000	Notice of Availability of the DEIS published in Federal Register

March 13, 2000	Request for Literature Cited in BE's provided
April 2000	Eyes on the Allegheny update on T&E Amendment status
April 6, 2000	Request for T&E land acquisitions provided
April 11, 2000	Final bat survey report for 1998 & 1999 sent to interested parties
April 17, 2000	Request for T&E land acquisitions provided
April 17, 2000	Request for amendment significance determination provided
April 24, 2000	45-day DEIS Comment Period Ends
June 26, 2000	Request for info on Indiana bat recovery plan provided
June 29, 2000	Request for info on Black cherry as roosting trees provided
July 2000	Eyes on the Allegheny update on T&E Amendment status
July 28, 2000	Media Rollout of T&E Amendment decision.
July/August, 2000	New Release announcing availability of FEIS and ROD
August, 2000	FEIS/ROD with cover letter distributed to public

SCOPING

Scoping is the term given to the process of gathering pertinent information about a proposed action. A description of the proposed action was provided to the public in the Notice of Intent (NOI) to Prepared an Environmental Impact Statement that was published in the Federal Register on Feb. 8, 1999. Approximately 350 letters were sent to individuals asking for comment. A news release describing the proposal and asking for comments was distributed to nearly 225 media outlets. Ten responses were received during the 30-day public comment period. One letter was received after the public comment period closed. This letter was reviewed by the ID Team and found to contain no issues other than those already identified in the ten timely responses.

The ID team made a thorough review of every letter and has summarized the contents from each. Comments were then evaluated to determine where they fit in relation to the analysis. The following categories were used:

- Applicable laws, regulations and guidelines,
- Beyond the Scope of this project,
- Formulation of the proposed action,
- Developing alternatives,
- Describing the affected environment,
- Evaluating effects of alternatives,

Summary of Scoping Comments

The following subsections summarize the comments received. The text shown in parentheses following each comment indicate the pages in the Draft EIS or associated documents where discussion related to the comment can be found.

Applicable laws, regulations and guidelines - Eight comments pertained to laws, regulations, and guidelines. Federal law applies to any and all actions that are implemented on the ANF. The relationship of this EIS to pertinent laws and regulations is described on the first few pages of Chapter 1. Comments include:

- Pursuant to FSM, avoid actions that may cause sensitive species to become threatened or endangered and develop and implement management objectives for populations and/or habitat for sensitive species. Must be no impacts to sensitive species without an analysis of the significance of adverse effects on populations, habitat, and species viability. (*pp. 53-55, 71-72; Appendix D*)
- Scoping is premature until after the biological opinion is issued. (**The ANF and F&WS conferred regular since the preparation of the T&E BA 12/98. While the BO was not officially published before scoping, the items presented in scoping were derived from these discussions with the F&WS. In fact, the final BO was the same as the information presented in scoping.**)
- Pursuant with Federal law, Forest Service policy, and FSM, place top priority on the recovery of T&E species. (*Entire EIS is crafted for this purpose.*)
- Use "Conservation of Endangered Species" consistent with its definition found in 2670.5(6) which requires recovery towards de-listing. (*p. 4; Appendix A*)
- Under NEPA, all activities that impact T&E species are considered significant, therefore there is significance to this project. (*Significance, as related to NEPA, is used to determine which type of document to prepare, an EA or an EIS. It is different than significance referred to in NFMA. See p. 2*)
- Should wait and assess significance once you see what the amendment will be. (*pp. 1, 2*)
- USFS must more accurately assess, pursuant to the regulations, whether this amendment is significant. USFS decision that it is not significant is arbitrary and capricious because it fails to consider the following six items: (*pp. 1, 2*)
 - full range of alternatives required by NEPA, (*Chapter 2*)
 - criteria set forth in NFMA to establish goals, objectives, and protective measures for conservation of PETS species, (*pp. 22-28, Appendix A*)
 - changes due to conservation of PETS species will alter long-term relationship between Forest Plan and goods and services provided and will affect a large portion of the planning area (National Forest), (*Chapter 4*)
 - change will take place immediately and will affect all future proposed actions, (*Chapters 2 and 4*)
 - the USDI Fish & Wildlife Service Biological Opinion,
 - the consequences of ANF's failure to amend the Forest Plan to address changed forest conditions, changes in land suitability for timber harvest, and new information on threatened, endangered, and sensitive species.

Scope of this project - There were 13 comments related to how we should determine the scope of this project. Under NEPA, the scoping process is used "not only to identify significant environmental issues deserving of study, but also to de-emphasize insignificant issues, narrowing the scope of the environmental impact statement process accordingly" (40 CFR 1500.4 (g)).

The scope of this project was determined by examining the new information related to T&E species, the BO and the ANF Conservation Program, along with the requirements of the applicable laws (i.e., NEPA, NFMA, ESA) and comments received from the public. The ID Team has reviewed the comments and determined that the following subject areas do not need to be addressed in order to resolve issues related to T&E species management. Therefore, they are beyond the scope of this project.

The R-9 Regional Forester's sensitive species list that has recently been revised and approved is not within the scope of this analysis. Conservation strategies have yet to be developed for each species. If changes to standards and guidelines are proposed in the future (as a result of development of conservation strategies for these species), additional Forest Plan amendments will be processed. The Biological Evaluation being prepared for this EIS does address the effects of this proposed action on all sensitive species currently on the Regional Forester's revised list.

Comments include:

- Include goals and objectives for T&E species in the Forest Plan.
- Complete Forest-wide surveys of suitable occupied or suitable unoccupied sensitive species habitat, populations, and temporal trends in abundance of species and habitat.
- ESA, NFMA, and NEPA requirements are very broad.
- Scope of the project is inappropriately narrow and inconsistent with Federal Law/Forest Service policy because it excludes sensitive species management.
- Consider potential sensitive species.
- Monitor populations of management indicator species.
- Save the forest for all wildlife. People are wiping out all wildlife.
- Incorporate new information (example: water shrews and Scudder's clubtail).
- Develop quantifiable objectives for managing populations/habitat for sensitive species.
- Forest Service must amend the Forest Plan:
 - to incorporate nine specific findings from the Timber Harvest Capability Report,
 - according to 36 CFR 219 requirements for a change in forest conditions which prompted salvage logging in MA 9.1 and 6.4 which was outside the scope of the Forest Plan, and
 - to include a more thorough old growth policy and the impact of the corridor on harvest levels.
- You should address the issues we always raise for timber sales.
- Address every issue Forest Service always says is beyond the scope of the analysis.
- Review programs and activities through a biological evaluation to determine their potential effect on sensitive species.

Formulation of the proposed action - The proposed action for this analysis was generated in a way that is different from many analyses. The specific proposals were, for the most part, identified as mandatory terms and conditions in the BO. These terms and conditions are based upon the available research and scientific knowledge pertaining to the T&E species addressed in the BO. Guidelines in the applicable recovery plans are considered by the FWS in the development of the BO. Following the issuance of the BO, ANF personnel developed the Conservation Program that includes additional, voluntary measures that will be implemented to provide additional conservation of T&E species. The steps taken to produce these documents were in full compliance with applicable laws and considered the best available information for these species.

The ID team considered that these comments indirectly relate to the development of the proposed action. They refer to science, regulations or standards that individuals would like to see carried forth in the proposed action. They refer to the kinds of things that were considered by FWS and ANF personnel when the BO and ANF CP were developed. These comments were also evaluated to determine if viable alternatives to the proposed action could be developed. Comments include:

- ANF needs to develop a range of recovery objectives for all T&E species that reflects differing degrees of protection. (*pp. 3-4; Chapter 2; pp. 69-73; Appendix A; Appendix D*)
- Proposed survey guidelines for small-whorled pogonia are inconsistent with Federal Law that requires both Forest-wide inventories and inventories where site-specific actions are planned. (*p. 7; Chapter 2*)
- Some management recommendations are highly inappropriate because there is no established cause-effect relationship with the required response of elevating populations of recovering threatened, endangered and sensitive species. (*Appendix A; Appendix D*)
- EIS must evaluate all threats to these species and develop management proposals to abate those threats. (*Biological Opinion; Chapter 2; Chapter 4; Appendix D*)
- Unproven activities need to address real threats to populations but are unacceptable unless:
 - there is a biological basis for conducting threat management activity, and (*Table 6 - p. 21; Chapter 4; Appendix D*)
 - the activity is conducted using adaptive management (so its success or failure can be documented).

- Management needs to produce results that can be directly observed by monitoring trends in abundance of species populations.
- Proposed action only implements minimum standards from the BA and the draft recovery plan; it does not place top priority on T&E species (Indiana bat mentioned). (*p. 7; Appendix A*)
- Forest Service must avoid all adverse impacts on T&E species. (*pp. 21-25; Chapter 4; Appendix A*)
- Must establish viability objectives when making decisions. (*Appendix D; Biological Opinion*)
- Recovery objectives for T&E species must be quantifiable. (*Appendix D; Biological Opinion*)
- Improve the proposed action by defining terms used and by including quantifiable and more comprehensive protection measures. (*pp. 21-25; Chapter 8 - Glossary; Appendix A*)
- Related to Indiana bats
 - To create more small depressions for water for the Indiana bat, strive for longer skidding distances and shorter system road length. This would decrease timber sale road costs and would benefit other wildlife, dispersed recreation, and hunting by providing a more non-roaded condition. (*pp. 13, 40; Appendix A*)
 - Question rationale for introducing shagbark and shellbark hickories to riparian areas, thereby alleviating concerns for retaining at least 16 live trees/acre in timber harvest areas. (*Table 11 - p. 30*)
 - What will creating water sources cost? How defined? There has to be a better way than leaving ruts in roads (need to protect roads for vehicle travel). (*pp. 12, 40; Appendix A*)
- Are additional regulations needed to restrict the release of heavy metals, PCB, pesticides, road salt, and sediment into the river? (*pp. 17, 40-41, 55*)
- Concur with using more road cross drains, especially near stream crossings.
- Road obliteration is too costly; use when absolutely necessary. (**Comment noted. Any road considered for closing would be evaluated to review resource, economic, and social trade-offs as well as short-term and long-term management goals.**)
- Need a new survey protocol for small whorled pogonia. (*p. 7*)
- Why change the survey procedure for small whorled pogonia? (*p. 7*)
- ANF needs motivation to work with individuals to conduct species and habitat surveys, to develop monitoring protocols, management objectives, and other protocols to protect sensitive species. (*p. 26; Appendix B; Appendix D*)
- Zebra mussels could pose a threat to mussel populations if they are introduced into the Allegheny River. (*pp. 6, 17, 55, 72*)

Developing Alternatives - These comments represent issues that are unresolved. They will be considered in the development of issues that are used to formulate alternatives. All alternatives will not necessarily be considered in detail.

- Analyze changing ANF management emphasis from even-aged management to zero commercial cut or to uneven-aged management as a means of prioritizing needs of T&E species. (*pp. 19, 27, 28*)
- Consider an alternative that halts all pending and active logging projects (and possibly other activities). (*pp. 19, 27, 28*)
- There are concerns related to the need to manage for T&E species. (*pp. 1, 3*)
- There is a need to continue to provide boating opportunities on the Allegheny reservoir, the Allegheny River and its tributaries. (*pp. 18, 19*)

Describing the affected environment - The following comments were considered by the Interdisciplinary Team in the development of Chapter 3 - Affected Environment.

- For a successful species conservation plan, must first understand the following for each species: (*Appendices A and D*)
 - the role of entry or exit rules as the determinants of rarity, and
 - the typological classification of ecological rarity.

- Need published monitoring data that demonstrates how successful current mitigation measures are at meeting goals for sensitive species management. (*Appendix D*)
- Need information with respect to how much habitat can be destroyed or degraded while still maintaining viable populations of sensitive species. (*Appendices A, B and D*)
- For the Indiana Bat:
 - Need to accurately describe what you found on the ANF for Indiana bat populations. Wasn't it just one bat? (*p. 10*)
 - Where on the ANF is water not available for bats? (*pp. 12, 40; Appendix A*)
 - I know of two caves on the ANF; one near Dunham Siding and one near Stoney Point. (*p. 13*)
- Related to Bald Eagles, Mussels, and the Allegheny River:
 - Are undesirable levels of heavy metals being released into the river? (*pp. 40, 55*)
 - Are pesticides, road salting, and timber harvesting impacting endangered mussels? (*pp. 15-17, 40, 55, 62, 63, 67, 68*)
 - Are sediment and PCB releases impacting bald eagles? (*pp. 17, 40, 41, 55, 63*)
- Related to Survey/Inventory for T&E Species:
 - Complete adequate quantitative inventories of current and proposed T&E Species, wildlife populations, plants, and assess diversity before making a decision. (*Appendix D*)
 - Develop and implement a protocol for a hierarchical sampling procedure for T&E&S species. Use likelihood of occurrence tables to assess uncertainty and risk associated with the protection for target species. (*Appendix D*)
 - There are no records of the small whorled pogonia occurring on the ANF, including records from botanists at the Carnegie Museum, from students, and others. (*p. 7*)

Evaluating effects of Alternatives - The ID team will consider the following comments in the development of Chapter 4 - Effects of Alternatives. They may be useful as a source of evaluation for the merits of one alternative over another.

- Does the proposed action really not "significantly" affect the ASQ for timber sales? Define what significant means here. (*pp. 2-3, 67-69, 78, 83*)
- Good comment on safety versus snag retention. Are the 9" dbh live trees to be left similar to the "insurance" trees now being left in pre-final harvest cuts? (*pp. 24, 60, 79*)
- Reducing canopy closure to 60-80 percent looks like a way to increase the ASQ. (*pp. 65, 68, 78*)
- Due to potential for wind throw, seriously question leaving large (20"+) live trees at 3 per acre, especially in clearcuts. (*p. 24*)
- Will you leave over-mature (20"+) black cherry and lose their economic value? (*pp. 24, 67, 68, 78*)

DRAFT EIS COMMENTS

The Draft EIS was released to the public on March 1, 1999. Approximately 200 individuals and/or organizations were sent letters with either the complete DEIS or a summary thereof asking for review and comment. A news release announcing the availability of the DEIS was also distributed to nearly 225 media outlets on March 1, 2000.

A Notice of Availability for the DEIS was published in the March 10, 2000, Federal Register, initiating the 45-day comment period during which the public and governmental agencies reviewed the documents and provided feedback.

The 76 letters received during the 45-day comment period were analyzed to assure all concerns would be considered. Through the analysis, we identified each comment that related to the T&E Amendment, evaluated whether it was substantive in regards to the amendment, and grouped them with other similar comments, if warranted. A response for each was then prepared including making changes in the document or analysis as appropriate (see Appendix F).

Changes were made throughout the DEIS to produce the final document. Many sections were rewritten and enhanced for clarification. Two new issues were identified that resulted in three additional alternatives being considered but eliminated from detailed study. A new standard and guideline was added and two others were dropped based on comments from the USDI Fish and Wildlife Service and others. Many corrections, clarifications and additions were made to the standards and guidelines, the alternatives, the effects, the Biological Assessment, and the ANF Conservation Program (including developing and appending the Zebra Mussel Action Plan). These changes improved the quality of the document and the decision.

Appendix F displays the resulting 188 substantive comments as well as the Forest Service response. Comments not related to the decision being made and those that were opinions or statements are not included. An index of the commentors is also found in Appendix F.

APPENDIX D

Biological Assessment for Threatened, Endangered, and Sensitive Species Allegheny National Forest

July 2000

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INTRODUCTION

This Biological Assessment includes a brief description of the habitat for federally proposed, endangered, and threatened species and regionally sensitive species followed by an analysis of potential impacts associated with each alternative being considered in the Environmental Impact Statement for the Forest Plan Amendment.

In June 1999, the Fish and Wildlife Service (FWS) and Allegheny National Forest (ANF) completed consultation for five federally threatened and endangered species that could potentially be impacted by continued implementation of the Allegheny National Forest Land and Resource Management Plan (Forest Plan). As a result of this consultation, the Forest Plan must be amended to incorporate the terms and conditions of the final Biological Opinion (BO).

The analysis presented in the Biological Assessment for Threatened and Endangered Species on the Allegheny National Forest (December 1998) is not repeated in this biological assessment; however, it is incorporated by reference along with Fish and Wildlife Service's Biological Opinion (June 1999). This analysis addresses the potential impacts of the new standards and guidelines and changes to standards and guidelines under each alternative.

SPECIES STATUS

Federally proposed, threatened, and endangered species, and Regional Forester sensitive species are addressed in this biological assessment.

The following is a description of the species status used in Table 1.

Endangered - Species is federally listed as endangered under the Endangered Species Act.

Threatened - Species is federally listed as threatened under the Endangered Species Act.

Proposed - Species is currently under review for federal listing and is ready to be listed.

Sensitive - Species is listed on the USDA Forest Service Eastern Region Sensitive Species.

Table 1. Federally Proposed, Threatened, Endangered, and Regionally Sensitive Species for the ANF

Species	Species Status
Reptiles Timber rattlesnake (<i>Crotalus horridus</i>)	Sensitive
Birds Bald eagle (<i>Haliaeetus leucocephalus</i>) Yellow-bellied flycatcher (<i>Empidonax flaviventris</i>)	Threatened ¹ Sensitive
Mammals Indiana bat (<i>Myotis sodalis</i>) N. Long-eared bat (<i>Myotis septentrionalis</i>) Northern water shrew (<i>Sorex palustris</i>)	Endangered Sensitive Sensitive
Invertebrates Clubshell mussel (<i>Pleurobema clava</i>) N. rifleshell (<i>Epioblasma torulosa rangiana</i>) Green faced clubtail (<i>Gomphus viridifrons</i>) Long-solid mussel (<i>Fusconaia subrotunda</i>) Harpoon clubtail (<i>Gomphus descriptus</i>) Rapids clubtail (<i>Gomphus quadricolor</i>)— Mustached clubtail (<i>Gomphus adelphus</i>) Midland clubtail (<i>Gomphus fraternus</i>) Ski-tailed emerald (<i>Somatochlora elongata</i>) Uhler's sundragon (<i>Helocordulia uhleri</i>) Maine snaketail (<i>Ophiogomphus mainensis</i>) Zebra clubtail (<i>Stylurus scudderi</i>)	Endangered Endangered Sensitive Sensitive Sensitive Sensitive Sensitive Sensitive Sensitive Sensitive Sensitive Sensitive

Table 1. Federally Proposed, Threatened, Endangered, and Regionally Sensitive Species for the ANF

Species	Species Status
Plants	
Small whorled pogonia (<i>Isotria medeoloides</i>)	Threatened
Wiegands sedge (<i>Carex wiegandii</i>)	Sensitive
Butternut (<i>Juglans cinerea</i>)	Sensitive
Creeping snowberry (<i>Gaultheria hispidula</i>)	Sensitive
Thread Rush (<i>Juncus filiformis</i>)	Sensitive
Rough cotton-grass (<i>Eriophorum tenellum</i>)	Sensitive
Fishes	
Spotted darter (<i>Etheostoma maculatum</i>)	Sensitive
Tippecanoe darter (<i>Etheostoma tippecanoe</i>)	Sensitive
Longhead darter (<i>Percina macrocephala</i>)	Sensitive
Mountain brook lamprey (<i>Ichthyomyzon greeleyi</i>)	Sensitive
Gravel chub (<i>Erimystax punctata</i>)	Sensitive
Channel darter (<i>Percina copelandi</i>)	Sensitive
Gilt darter (<i>Percina evides</i>)	Sensitive

1 - The bald eagle is proposed for de-listing.

LIFE HISTORY

A brief description of the habitat for each species is included below with some description of the behavior (eg. foraging, breeding, roosting, etc.) associated with the habitat. For the Bald eagle, Indiana bat, Clubshell mussel, Northern riffleshell mussel, and Small whorled pogonia a detailed habitat description can be found in the Biological Assessment for Threatened and Endangered Species on the Allegheny National Forest (December 1998).

Timber Rattlesnake

The timber rattlesnake inhabits wooded hillsides with rock outcrops where rodents are often abundant. Rock outcrops provide summer basking sites as well as fissures which allow rattlesnakes to reach winter dens deep in the ground below frost line. Slopes with a southern exposure are preferred. Rattlesnakes usually return to the same den each winter (Shaffer, 1991). Maintaining the integrity of these den sites is the primary habitat management action for sustaining rattlesnake populations on the ANF.

Bald Eagle

On July 12, 1995, the USDI Fish and Wildlife Service (FWS) reclassified the Bald eagle *Haliaeetus leucocephalus* from endangered to threatened throughout the lower 48 states of the United States. In March 1998, the FWS announced plans to analyze information to determine if the Bald eagle should be de-listed. In July 1999 the FWS proposed de-listing the Bald eagle.

The FWS has divided the lower 48 states into 5 recovery regions. Northwest Pennsylvania, including the ANF, is in the Northern States region. This region has a de-listing goal of 1,200 occupied breeding areas distributed over a minimum of 16 states, with an average annual productivity of at least 1.0 young per occupied nest. In 1994 there were 1,772 known occupied territories distributed over 21 states with an estimated 1.26 young per occupied territory (Federal Register, 1995).

Distribution

Twenty-two active Bald eagle nests have been found in Northwestern Pennsylvania. Two of these nests are located within the ANF proclamation boundary on the side hills of the Allegheny Reservoir. One additional nest is just outside the Forest boundary on an island (private land) in the Allegheny River near Tionesta. The nesting success for the three nests is presented in Table 2 (PA Game Commission, 1999 unpublished).

Predator guards have been placed on the Tionesta, Cornplanter and Kinzua nests. Causes of nest failures in 1994, 1995 and 1999 (PA Game Commission, 1999 unpublished) are unknown.

Table 2. Bald Eagle Nesting Status for the ANF

Nest Location	Year Found	Young Produced								Total
		1992	1993	1994	1995	1996	1997	1998	1999	
Kinzua	1993	-	1	0	2	2	1	2	0	8
Cornplanter	1998	-	-	-	-	-	-	1	2	3
Tionesta	1993	2	2	2	0	2*	1	2	2	13

* Moved from hillside to island in River.

Habitat

In Northwestern Pennsylvania, Bald eagles nest in large trees near a body of water. Two of the three nests on the ANF are in white pines. These large white pines tower above the adjacent hardwood canopy allowing easy access to the nest while providing some concealment and shade in the form of evergreen branches.

Eagles forage along rivers, large streams, and lakes. They often perch in trees near the waters' edge and wait for fish or waterfowl to come along. In winter, they sometimes congregate in winter roosts. These roosts commonly have 6 - 10 eagles in one or two trees.

Habitat on the Allegheny National Forest

The Allegheny Reservoir and the Allegheny River provide the best nesting, foraging, and winter perching habitat on the Allegheny National Forest. Both adult and juvenile eagles are frequently seen on the Allegheny Reservoir. The nest near Kinzua Dam has been attended by three adults in the same season, a behavior that has been reported in the literature (Brenda Pebbles, pers. comm.).

The Allegheny River is lined with sycamores, silver maples, oaks, white pines, and a variety of hardwoods that provide ample perching sites for foraging eagles. No winter roosting sites have been found on the ANF despite winter searches to locate them.

The larger streams on the ANF provide enough open canopy and access to the water to provide foraging habitat for bald eagles. Eagles have been observed foraging along Tionesta Creek, Salmon Creek, Kinzua Creek, Clarion River, Millstone Creek, Big Mill Creek, Sugar Run, and Willow Creek. Brokenstraw Creek, Conewango Creek, and the upper Allegheny River in New York State are eagle foraging areas adjacent to the ANF.

Eagles occasionally utilize the small impoundments spread throughout the forest. Eagle sightings have been made at Buzzard Swamp, Beaver Meadows, Twin Lakes, Mead Run ponds, and the Owls Nest ponds. Despite both winter and summer surveys, no roosting areas have been identified on the ANF where eagles gather on a regular and consistent basis.

Protecting and monitoring known nest sites, and searching for new nests and roosting areas are the primary management actions for eagles on the ANF.

Yellow-bellied Flycatcher

The primary breeding range for this state threatened species is the boreal conifer forests of Canada. In Pennsylvania it nests in mossy, poorly drained areas in extensive sections of northern hardwood forests. On the ANF it has been documented nesting in an unsalvaged portion of the 1985 tornado swath (D. Gross, pers. comm.). Unlike other flycatchers, the Yellow-bellied flycatcher nests on the ground usually concealed in sphagnum moss. The home range of this rare flycatcher is between one and ten acres (DeGraff *et al.*, 1992). The Pennsylvania Breeding Bird Atlas project confirmed this species in only two survey blocks (Brauning, 1992). habitat management for this species on the ANF focuses on maintaining suitable wet areas with sphagnum moss.

Indiana Bat

Much of the life history information for the Indiana bat is summarized in the Habitat Suitability Report by Romme *et al.* (1995) and in the Technical Draft of the Indiana Bat Recovery Plan prepared by the Indiana Bat Recovery Team in 1999 (USDI-FWS, 1999a). New information on Indiana bat habitat requirements and distribution is developing rapidly as research and surveys continue. This Biological Evaluation incorporates the most current scientific knowledge by utilizing portions of these reports as well as new information, to provide an understanding of the life history of the Indiana bat in Pennsylvania.

The Indiana bat was listed as endangered by the FWS in March 1967. A recovery plan was completed by a team of bat experts in 1983 (USDI-FWS, 1983). A revised Draft Recovery Plan was released for public review in 1999 (USDI-FWS, 1999a).

Distribution

Distribution of the Indiana bat is described as the eastern United States from Oklahoma, Iowa, and Wisconsin, east to Vermont and south to northwestern Florida (Romme *et al.*, 1995). This migratory species may be found throughout its range during the summer, but is restricted to caves in the winter. More than 85 percent of the known Indiana bats (about 292,000) winter in large limestone caves in Indiana, Kentucky, and Missouri. Pennsylvania has eight known hibernacula with an estimated population of more than 300 Indiana bats. The closest known hibernaculum to the ANF is in Armstrong County, about 60 miles southwest of the ANF.

The Indiana Bat Draft Recovery Plan shows a few summer records for the Indiana bat in Ohio near Lake Erie and the Pennsylvania-Ohio state line. These records are old band recoveries that were reported in Barbour and Davis (1969) and the BA (p. 15) (USDA-FS, 1998).

New York has a wintering population of about 15,000 Indiana bats (mostly in the central and eastern portion of the State), although no summer roosting sites have been found. (BA, p. 15) (USDA-FS, 1998).

Occurrence of the Indiana Bat on the Allegheny National Forest

In May 1998, a two-year survey of potential Indiana bat foraging areas was initiated by the ANF as part of a partnership agreement with Pennsylvania State University, Altoona Campus. Twenty-five sites which were well distributed across the ANF landscape were selected for sampling in 1998 using both mistnets and anabat detectors. Fish and Wildlife Service mistnetting protocols are being used and supplemented with anabat detectors. The progress report for the first year of surveys revealed that Indiana bats were detected at seven of the 25 sites, and one Indiana bat was caught in a mistnet at one of the seven sites (Gannon, 1999 unpublished).

Another 32 sites were sampled in 1999; no Indiana bats were captured at any of these sites. Indiana bats were detected at a total of 11 sites during the two years of bat surveys..

Life History

Reproduction

Like other *Myotis* species, Indiana bats mate in autumn. The females store the sperm through the winter hibernation period and fertilization occurs in the spring. The females are, therefore, pregnant when they arrive at the summer maternity colony (mid April to late May) and give birth to one young in late May to early July. Juveniles become volant beginning in early July to early August. Juveniles may mate their first autumn (USDI-FWS, 1999a).

Food Habits

Indiana bats eat a variety of flying insects, both terrestrial and aquatic. Reproductively-active females and juveniles may consume a greater diversity of insects than males and non-reproductively active females (USDI-FWS, 1999a). By examining fecal material, Brack (1983) found that Lepidoptera (moths) comprised 48 percent of their diet while Coleoptera (beetles) made up 24 percent of their diet.

Habitat

Summer Roosting Habitat

Upon emergence from the hibernacula in the spring, females travel varying distances to their summer maternity roosts. Females emerge prior to males. Males generally do not travel as great a distance as the females, are more solitary, and at times use caves to roost in the summer (Widlak, 1997).

Indiana bats typically roost in snags or live trees during the day throughout the summer, although in 1997 two lactating females were found in the attic of the Canoe Creek Church (Hassinger and Butchkowski, 1998). Most roost sites are located beneath loose or exfoliating bark or in tree cavities. Preferred roost trees are larger than 9 inches diameter breast height (dbh) and are located in forested habitat where the degree of overstory canopy closure ranges from 60 to 80 percent. In general, it appears that the largest available trees with exfoliating bark or cavities with at least some daily exposure to sunlight are the most likely to be used as maternity roosts. Most roosts are within 0.6 mile from a water source. The quality of habitat for roosting decreases slightly as canopy closure increases above 80 percent or decreases below 60 percent (Romme *et al.*, 1995).

Unlike females, which seem to prefer very large trees as maternity roosts, it appears that males are less selective and will use trees of almost any size as roosts, as long as they have loose bark or cavities under or into which to crawl (Kiser and Elliott, 1996).

Summer maternity colonies found to date number 100 or fewer adults (Gardner *et al.*, 1991). Females in maternity colonies use multiple roosts. Most colonies use at least one primary roost where the majority of the colony roosts together. In Missouri, one to three primary roosts were used (Callahan *et al.*, 1997). Additionally, several secondary roosts occur in the vicinity of the primary roosts (Callahan *et al.*, 1997; Gardner *et al.*, 1991). Primary roosts were standing dead trees exposed to direct sunlight. Alternate roosts included both living and dead trees located within more shaded areas of forest stands. Use seems to be influenced by weather conditions.

Roost trees are naturally ephemeral. Individual roost trees are only suitable until all bark sloughs off or the tree falls to the ground (Callahan *et al.*, 1997; Clawson, 1986; Gardner *et al.*, 1991; Kurta *et al.*, 1993; Kurta *et al.*, 1996). Many are suitable only for a few years (Gardner *et al.*, 1991; Humphrey *et al.*, 1977), while others may last 10 to 20 years. Bats which depend on these naturally ephemeral roosts have developed a natural survival mechanism to find alternate roost trees when a suitable roost tree becomes unsuitable. Tree removal does not discourage Indiana bats from using dead trees nearby as roosts, and, in fact, may make them more attractive by opening up the forest canopy allowing more sunlight to hit the tree making it warmer and thermally more stable (USDI-FWS, 1999a).

Management of an area for a perpetual supply of potential roost trees is much more important than trying to manage individual roost trees (Callahan *et al.*, 1997; Clawson, 1986; Kiser and Elliot, 1996; Romme *et al.*, 1995). Forest Plan standards and guidelines for snags and den trees ensure that at least 5 to 10 snags per acre and at least 3 den trees per acre are retained on all sites receiving a timber harvest treatment. Although the exact number of snags and den trees retained will vary by management area, they will be well distributed across the landscape in all areas (USDA-FS, 1986). Romme *et al.*, (1995) recommended six roost trees greater than nine inches dbh per acre as optimum for Indiana bats, recognizing that males will roost in trees as small as four inches dbh. An evaluation of the landscape distribution of dead and live trees on the ANF shows there are vast numbers of potential roost trees within the 95 percent of the acres that are forested (USDA-FS, 1998).

Results of radiotelemetry studies of Indiana bats in Michigan indicate that distance between roost trees ranged from 23 feet (7 m.) to 2.5 miles (4.1 km) (Kurta *et al.*, 1996). Actual distance traveled by most bats when changing roost trees was generally less than 0.62 mile (1 km); however, one move of 3.6 miles (5.8 km) was observed. Two bats banded in 1995 were recaptured in 1996 indicating fidelity to roosting areas in Michigan (Kurta *et al.*, 1996).

Macrohabitat and microhabitat variables were measured at Indiana bat maternity sites in northern Missouri and at comparable sites where Indiana bats were not captured (Miller, 1996). No significant differences in percent land cover of the major cover types (forest, row crop, and grassland) between the site types were noted. The

lack of differences in measured variables between sites suggest that additional factors (other than those associated with habitat) may be responsible for Indiana bat decline in Missouri (Miller, 1996). However, significantly more large diameter trees (dbh $\geq 12"$) were found where Indiana bats have been captured than at unsuccessful netting sites (Miller, 1996). On the other hand, Romme *et al.*, (1995) state that at least 30 percent forest cover across the landscape is optimal for Indiana bats.

Site fidelity, the tendency for individuals to return repeatedly to the same site, is documented for Indiana bats. They frequently use the same trees for the time that a tree provides suitable roosting cover, and within an individual's home range there are several roost trees. If one roost tree is lost or becomes unsuitable, there are others in the same vicinity that can be used. Callahan (1993) found that maternity colonies moved frequently between primary and alternate roosts depending on disturbance or climatic changes. He also noted that the bats were locating new roost sites into late summer. In Illinois, Gardner *et al.*, (1991) were concerned that disturbing roosts may cause bats to expend additional energy searching for new roosts at a time when the bat's energies should be used for rearing young. They found a high degree of within-season site fidelity to specific trees by individual bats. However, they found no evidence that bats necessarily returned to the same trees in subsequent years. As long as there is an ample supply of potential roost trees in an area, protecting those roosts being used in the current season should be sufficient to protect Indiana bats.

Researchers are still learning much about summer roosting habitat, and there appears to be variability throughout the bat's range. The existence of Indiana bats in a particular area may be governed by the availability of natural roost structures, primarily dead trees with loose bark. The suitability of any tree as a roost site is determined by(1) its condition (dead or alive), 2) the quantity of loose bark, 3) the tree's solar exposure and location in relation to other trees, and 4) its spatial relationship to water sources and foraging areas (USDI-FWS, 1999a).

Foraging Habitat

Indiana bats prefer to forage in the upper canopy layers of forests where the degree of overstory canopy ranges between 50 and 70 percent closure. Some foraging also takes place over clearings with early successional vegetation, along the forested borders of agricultural fields, and along strips of trees extending into more open habitats (Romme *et al.*, 1995).

Indiana bats fitted with radio transmitters in spring of 1994 in Missouri traveled up to 6.2 miles from their release site. Foraging areas of the female Indiana bats (n=2) averaged 844 acres. Foraging ranges of the male Indiana bats (n=4) averaged 6,837 acres (Humphrey *et al.*, 1977). These foraging ranges are considerably larger than those reported by Gardner *et al.*, (1991) in Illinois. Home ranges in Illinois were reported to be 129 acres for pregnant females, 236 acres for lactating females, 532 acres for post-lactating females, 92.5 acres for juvenile females, 143 acres for adult males and 71 acres for juvenile males (Garner and Gardner, 1992).

Streams, wetlands, small ponds, and even road ruts provide drinking water for Indiana bats as they forage during the summer months.

Hibernacula

Indiana bats hibernate in caves or abandoned mines generally between October and April. Indiana bats have specific microclimate requirements (temperature and humidity) for winter hibernation sites. Less than one percent of the caves and mines within the range of the species are estimated to offer suitable hibernating conditions (Gardner *et al.*, 1991; USDI-FWS, 1999a). Cave gates that restrict air flow may be partly responsible for the decline of Indiana bat populations.

Male Indiana bats often remain near the hibernaculum in the spring when they emerge from hibernation. Hobson (1993) found six male Indiana bats among a sampling of 198 bats in the vicinity of a known hibernaculum in Virginia. A subsequent study of Indiana bats in Virginia reports that one male radio-tracked for two weeks following departure from the hibernaculum foraged and roosted in the vicinity of the hibernaculum (Hobson and Holland, 1995).

The Pennsylvania Game Commission has completed extensive bat surveys of known caves throughout Pennsylvania. The abandoned mine at Canoe Creek State Park (75 miles southeast of the ANF) contains the largest known hibernaculum of Indiana bats in Pennsylvania (PA Game Commission, 1995 Unpublished).

Northern Long-eared Bat

The Northern Long-eared bat (formerly called Keen's Myotis) is a Regionally designated sensitive species that roosts singly or in small colonies in crevices under loose tree bark, cliff walls, or in caves (DeGraaf and Rudis, 1986). Females seek attics, barns, and tree cavities for small nursery colonies. Maternity habitat may be slightly different from that of the Indiana bat, in that the northern Long-eared may use buildings and cavities more frequently than the Indiana bat. In New Hampshire, Sasse and Pekins (1996) found Northern Long-eared bats roosting in snags with larger diameters, greater height, and more bark than available snags in the surrounding forest. Canopy closure of occupied roost stands was also lower than in adjacent stands. This bat typically forages over ponds and clearings and high along the forest edge. For hibernation, the northern Long-eared bat seeks caves or mine shafts with temperatures near 40 degrees Fahrenheit (DeGraaf and Rudis 1986).

In Pennsylvania, between 1980 and 1995, 69 of 366 caves were found to contain Northern Long-eared bats (PA Game Commission, 1995 unpublished). In 1995, 12 of 33 caves surveyed contained Northern Long-eared bats (PA Game Commission 1995, unpublished)

During the 1998 ANF survey, this bat was recorded at 18 of the 25 survey sites and captured at 13 of the sites (Gannon 1999, unpublished). Of the 25 sites surveyed in 1998, the Northern Long-eared bats was recorded at 6 of the 7 sites where Indiana bats were detected. An additional 33 sites were surveyed in 1999. Based upon the combined 1998 and 1999 survey data, the Northern long-eared bat appears to be one of the more common forest dwelling bats on the ANF.

Maintaining large snags and surveying for bats prior to demolition of old buildings are the primary management actions directed towards the conservation of this species on the ANF.

Northern Water Shrew

This species is found in wet areas, especially grass/sedge marsh or shrub zones along ponds and streams in coniferous forests (Wrigley *et al.*, 1979). It is believed this species travels along the waters edge and hides from predators among rocks, root wads and logs. Northern water shrews actually dive into the water and forage on benthic invertebrates. Maintaining the quality of the aquatic environment and streambank structure, including undercut banks and log structures where the shrews feed and live is very important (Bier, 1994). Most of the Northern water shrews reported in Pennsylvania were collected in montane areas near high gradient rock-bedded creeks with the surrounding forest consisting of heavy stands of hemlock, spruce and rhododendron (Genoways and Brenner, 1985). DeGraaf and Rudis (1986) report this species to have a small home range of from one-half to one acre in size.

The water shrew was surveyed for and collected on the ANF along the upper reaches of the Bear Creek drainage, a tributary to the Clarion River. The stream width at the two collection points varied from 2 to 5 meters and stream depths ranged from 0.1 and 1.0 meters. Canopy closure ranged from 0 to 75 percent and understory trees were predominantly hophornbeam and witch hazel, while ground cover varied widely and included hay-scented, New York, sensitive and cinnamon fern (Bier 1994). The 1994 survey report recommends maintaining water quality of streams and associated wetlands, protecting against non-point siltation and certain pesticides, and protection of stream banks and critical forested habitat along stream corridors. A Northern water shrew was also collected in the Tionesta Research Natural Area by Dr. Dave deCalesta in the mid 1990s (Dave deCalesta, pers. comm.).

Clubshell Mussel and Northern Riffleshell Mussel

Both of these freshwater mussels were widespread throughout most of the Ohio River and Maumee River drainages prior to 1800, and the clubshell appears to have been very common. Both species now exist in 8 to 10 isolated populations each, most of which are small and peripheral. The largest remaining population of the clubshell is in the Tippecanoe River in Indiana, while that of the northern riffleshell is in French Creek, Pennsylvania (Watters, 1993).

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Swarming Habitat

Prior to entering the hibernaculum in the fall, bats swarm near the entrance. This swarming activity is related to mating and may continue for several weeks. Studies of fall swarming activity have shown that Indiana bats arrive at hibernacula as early as September and continue to roost in nearby trees throughout October (Kiser and MacGregor, 1997). During this time, Indiana bats are building fat reserves for the winter.

Habitat Evaluation Factors Used on the ANF

The ANF has developed local habitat evaluation factors based upon a combination of information contained in the HSI model and local data. Habitat evaluation criteria are defined on pages 3-4 of Appendix E of the BA (USDA-FS, 1998).

The ANF in Context with a Larger Scale of Analysis

The ANF is part of a larger forested landscape which can be evaluated for Indiana bat habitat. Statewide inventory data collected by the Forest Inventory and Analysis Unit of the Northeastern Research Station shows that 17 million acres of Pennsylvania are forested, with sawtimber sized forests found across 54 percent of the State (Alerich, 1993). There are over 2.4 billion live trees and over 303 million dead trees found within the Commonwealth. With 95 percent of the ANF found to be in a forested condition and 78 percent in sawtimber sized condition, higher than average numbers of trees per acre (both living and dead) are found on the ANF than for Pennsylvania as a whole (Alerich, 1993).

Forest-wide Distribution of Habitat

Virtually every acre of the ANF contributes in some way towards maternity landscape/roost habitat and foraging habitat, however, some acres provide more beneficial habitat conditions than others. Three analyses completed in 1998 were used to understand the quality and quantity of habitats across the ANF. Additional details are contained on pages 38-39 of the BA and Appendix E (USDA-FS, 1998) and on pages 66-68 of the BO (USDI-FWS, 1999b). Numbers presented here have been updated based upon the most recent vegetation surveys and local research regarding Indiana bat habitat evaluations (deCalesta and Ordiway, pers. comm). Pertinent findings of these analysis include:

- Both landscape level and stand level conditions should be considered in the evaluation of habitat conditions. Scale of evaluation is a critical factor.
- Assessment of maternity landscape habitat includes an evaluation of the distribution of acres between different levels of canopy closure. Maternity roost habitat consists of an evaluation of the distribution of dead and live trees which serve as potential roost habitat.
- Currently, there are over 187,600 acres of maternity landscape habitat in an optimal condition (37 percent of the ANF). The potential exists to develop an additional 163,400 acres of optimal habitat, forest-wide (32 percent of the ANF) by reducing canopy closure.
- The distribution of live trees which contribute towards maternity roost habitat meet optimal habitat conditions, and are found across 73 percent of the ANF. The distribution of dead trees meet a mix of optimal and suitable habitat conditions. Optimal distribution of 9" diameter dead trees are found (38 percent of the ANF). Suitable distribution of larger diameter (12 inch trees) are found (28 percent of the ANF).
- Assessment of foraging habitat consists of an evaluation of the distribution of acres between different levels of canopy closure.
- There are over 99,400 acres of foraging habitat in an optimal condition (19 percent of the ANF). The potential exists to develop an additional 257,400 acres of optimal habitat, forest-wide (50 percent of the ANF) by reducing canopy closure.

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The Clubshell mussel and Northern riffleshell mussel are both found in the Allegheny River (Western Pennsylvania Conservancy, 1989). Populations have declined from historic levels and viability of some sub-populations is threatened.

During the summer of 1994, the Western Pennsylvania Conservancy conducted mussel surveys on 10 smaller streams on the ANF, within the Allegheny River watershed (Bier *et al.*, 1997). East Branch Tionesta Cr., Kinzua Cr., Minister Cr., Salmon Cr., S. Branch Kinzua Cr., S. Branch Tionesta Cr., Sugar Run, Tionesta Cr. and West Branch Tionesta Cr. were surveyed. Nine species of freshwater mussels were documented, but no clubshell or northern riffleshells were collected.

Green-faced Clubtail

In a 1993 survey of dragonflies and damselflies on the Clarion River, the Green-faced clubtail was found to be numerous in the main stretch of the Clarion River but absent from survey sites along Millstone Creek (Western Pennsylvania Conservancy and Carnegie Museum of Natural History, 1994). Surveys of 10 streams on the ANF in 1994 did not reveal the presence of any Green-faced clubtails (Bier *et al.* 1997). This species may be restricted to the Clarion River and microhabitats located there.

Long-solid Mussel

The Long-solid mussel has a Nature Conservancy global rank of G4 (secure globally but may be quite rare in parts of its range) and a state rank of S2S3 (Imperiled in State because of rarity).

The Long-solid mussel has been documented in Tionesta Creek near Kelletville by Winters (1973 as reported in Bier *et al.* 1997)) and Bier *et al.*, (1997). Of ten streams surveyed for mussels on the Allegheny National Forest (ANF), this was the only site where the Long-solid was found (Bier *et al.*, 1997). The Long-solid was not found in the Allegheny River during 1909 and 1989 mussel surveys (Western Pennsylvania Conservancy, 1989b).

Three factors which influence the distribution and abundance of healthy mussel populations in the Allegheny National Forest include (1) landscape geology/topography, (2) watershed size, and (3) water quality, both existing and historic. ANF streams are within the Unglaciated Allegheny Plateau Section of northwestern Pennsylvania. Some sub-watersheds within the Allegheny River basin drain glacial landscapes that result in mineralized and buffered waters and sand/gravel substrates favorable to freshwater mussels. However, ANF streams are generally less buffered, more acidic, medium to high gradient and colder than optimum for mussels (Bier *et al.*, 1997).

Bier *et al.*, (1997) have found that a minimum watershed size of about 20 square miles is necessary to support mussel populations. Tionesta Creek watershed is 478 square miles and supports at least 8 mussel species (Bier *et al.*, 1997).

Water quality can also be a limiting factor. Bier *et al.* (1997) reported that Ortmann found poor water quality throughout the region near the turn of the century. Some watersheds have experienced past water quality and sedimentation problems due to oil and gas operations, poorly designed roads, and sewage effluents from small towns. Many of the past water quality problems have been remedied and water quality has improved within the Tionesta drainage over the past 20 years (Bier *et al.*, 1997).

Harpoon Clubtail

This species is a member of the Gomphidae family and prefers lotic (running water) habitats. Nymphs lie partially buried in sand and silt substrates to ambush their prey. In the 1994 Clarion River Study (W. PA. Conservancy and Carnegie Museum, 1994), 6 adults were sampled from 2 of the 9 study sites. During the 1997 survey conducted on the Forest (Bier *et al.*, 1997), 25 adults were sampled from 6 of the 10 streams surveyed. .

Rapids Clubtail

This species is a member of the Gomphidae family and prefers lotic (running water) habitats. Nymphs lie partially buried in sand and silt substrates to ambush their prey. In the 1994 Clarion River Study (W. PA. Conservancy and Carnegie Museum, 1994), 1 naiad and 23 adults of this species were sampled from 5 of the 9 study sites. -This species was not collected during the 1997 survey (Bier *et al.*, 1997).

Mustached Clubtail

This species is a member of the Gomphidae family and prefers lotic (running water) habitats. Nymphs lie partially buried in sand and silt substrates to ambush their prey. In the 1994 Clarion River Study (W. PA. Conservancy and Carnegie Museum, 1994), 1 adult was sampled at 1 of the 9 sites and 9 naiads were sampled from 4 of the 9 study sites. This species was not collected during the 1997 survey (Bier *et al.*, 1997).

Midland Clubtail

This species is a member of the Gomphidae family and prefers lotic (running water) habitats. Nymphs lie partially buried in sand and silt substrates to ambush their prey. In the 1994 Clarion River Study (W. PA. Conservancy and Carnegie Museum 1994), 1 adult was sampled from 1 of the 9 study sites and 18 naiads were sampled from 5 of the 9 sites. During the 1997 survey conducted on the Forest (Bier *et al.*, 1997), 1 adult and 4 naiads were sampled from 3 of the 10 streams surveyed.

Ski-tailed Emerald

This species is a member of the Cordulidae family and prefers slow streams and creeks near swamps or bogs (Western PA Conservancy and Carnegie Museum, 1994). They are active hunters with long, spider like legs (Merritt and Cummins, 1996). Prior to the 1994 survey of the Clarion River, this species was only known from the central part of the State (Western PA Conservancy and Carnegie Museum, 1994). However in the 1994 Clarion River Study (W. PA. Conservancy and Carnegie Museum, 1994), 2 adults were sampled from 1 of the 9 study sites and 3 naiads of this species was documented from 2 of the 9 study sites. During the 1997 survey conducted on the Forest (Bier *et al.*, 1997), 2 adults and 1 naiad were sampled from 3 of the 10 streams surveyed.

Uhler's Sundragon

This species is a member of the family Cordulidae family and prefers lotic (running water) habitats. Prior to the 1994 survey of the Clarion River, this species was only known from the central part of the State (Western PA Convergency and Carnegie Museum, 1994). However in the 1994 Clarion River Study (W. PA. Conservancy and Carnegie Museum, 1994), 3 naiads of this species were documented from 3 of the 9 study sites. During the 1997 survey conducted on the Forest (Bier *et al.*, 1997), 1 adult was sampled from 1 of the 10 streams surveyed.

Maine Snaketail

This species is a member of the family Gomphidae and prefers lotic (running water) habitats. Nymphs lie partially buried in sand and silt substrates to ambush their prey. In the 1994 Clarion River Study (W. PA. Conservancy and Carnegie Museum, 1994), 3 adults were sampled from 2 of the 9 study sites and 32 naiads were sampled from 6 of the 9 study sites. During the 1997 survey conducted on the Forest (Bier *et al.*, 1997), 6 adults and 71 naiads were sampled from 5 of the 10 streams surveyed, including Kinzua Creek.

Zebra Clubtail

This species is a member of the family Gomphidae and prefers lotic (running water) habitats. Nymphs lie partially buried in sand and silt substrates to ambush their prey. In the 1994 Clarion River Study (W. PA. Conservancy and Carnegie Museum, 1994), 2 naiads were sampled from 2 of the 9 study sites. During the 1997 survey conducted on the Forest (Bier *et al.*, 1997), 31 naiads were sampled from 5 of the 10 streams surveyed.

Small Whorled Pogonia

In Pennsylvania this species occurs on dry oak sites on benches or saddles or near the beginning of intermittent drainages, usually on south or southeast facing slopes. One population occurs 15 miles west and another 55 miles east of the ANF. Although suitable habitat exists on the ANF, its preference by deer may be a limiting factor affecting occurrence of this species on the ANF. Since 1987, more than 227,000 acres on the ANF have been surveyed, but no plants have been found.

Following discussion with the FWS and Paul Wiegman of the Western Pennsylvania Conservancy, the ANF implemented new survey procedures in 1994. Potential habitat for this species includes topographic saddles and swales between ridges, slopes with benches and/or ephemeral streams, mature or maturing forest conditions, and sites with little or no understory and without dense fern cover. Surveys are implemented during the month of July, when a second "wave" of non-flowering plants emerge (flowering plants emerge in early June). This species occurs across a large scattered range, nowhere is it abundant.

Weigand's Sedge

This plant is an eastern or northeastern North American maritime species. This species is located mainly in acidic soils or drier, sometimes disturbed, margins of acidic sphagnum bogs or fens (Ostlie, 1990); Ostlie, 1990 unpublished). Its also been found on acidic, sandy flats and shrubby sphagnum bogs (Michigan). It is known to occur on two sites in PA, both south of the glacial boundary within the Allegheny mountains. This sedge has been found on four sites in Elk and McKean counties, outside the Allegheny National Forest (Ostlie, 1990 unpublished; Rhoads and Kleir, 1993). Occupied habitat in these areas has been characterized by high plateau, white pine/hemlock/mixed hardwood swamps. Wiegand's sedge is abundant at these sites, especially where beaver activity has killed the trees due to high water inundation. Historic collections within Pennsylvania suggest open sphagnum bogs as habitat (Ostlie, 1990 unpublished).

A wetland rare plant survey conducted on the National Forest in 1989-90 by the Western Pennsylvania Conservancy (1989) did not detect Wiegand's sedge on any sites across the ANF. Also, none were found during a plant survey of the Clarion River Watershed by Williams (1994). Optimal or ideal habitat such as shrubby sphagnum bogs, sphagnum openings in swamps typically formed by old beaver activity, or conifer mixed-hardwood swamps occur in scattered locations across the ANF.

Butternut

Butternut is being killed throughout its range in North America by *Sirococcus clavigigeneti juglandacearum*, a fungus of unknown origin causing multiple branch and stem cankers that eventually girdle infected trees (USDA Forest Service, 1993).

Butternut is a small to medium sized tree that seldom exceed 75 years of age. It commonly grows on rich loamy soils, as well as on dry rocky soils of limestone origin. On deeper soils it forms a taproot and wide-spreading lateral roots. Butternut never occurs in pure stands, although it is occasionally abundant locally in mixed hardwood forests (Rink, 1990). Butternut is a shade intolerant species and must be in the overstory to thrive. Young trees may withstand competition from the side but will not survive shade from above. Reproduction can only be sustained in stand openings or fields where shade cannot impede its development (Ostry *et al.*, 1994).

Creeping Snowberry

Creeping snowberry is known to occur in a wet area along Queen Creek on the ANF (Western PA Conservancy, 1989). It has also been documented from Elk and McKean Counties (Rhoads and Klein, 1993). This facultative wetland species occurs in bogs, swamps, and other types of wetlands, usually growing on hummocks or near old tree stumps.

Thread Rush

This herbaceous perennial is known to occur in Warren and McKean Counties. Thread rush is a facultative wetland species that is found in bogs and sandy shores (Rhoads and Klein, 1993). This species was not found during the 1989 wetland plant survey on the ANF (Western PA Conservancy, 1989a). Maintaining the integrity of wetland and riparian systems will benefit this species.

Rough Cotton-grass

This obligate wetland species is found in bogs. It is documented as occurring in Warren County (Rhoads and Klein, 1993). This species was not found during the 1989 wetland plant survey (Western PA Conservancy, 1989a). Maintaining the ecological integrity of bogs and wetlands will benefit this species.

Spotted Darter

This regionally sensitive species inhabits deep swift riffles of large streams over a substrate of large rubble (Cooper, 1985). This darter has been found sporadically in a few tributaries of the Ohio River system in New York and Pennsylvania. Collection of this species has been made near the Allegheny National Forest in French Creek in Crawford County (USDI-FWS, 1958-1974). The Spotted darter has also been documented as occurring in the Allegheny River (Lee, 1975).

Tippecanoe Darter

This darter prefers riffle areas 4 to 20 inches deep, in clean rivers and large creeks with a bottom of pea-sized clean gravel and a high bottom current velocity (Wild Resource Conservation Fund, 1995). This darter has been found in French Creek and in the Allegheny River (USDI-FWS, 1958-1974).

Longhead Darter

This species most frequently inhabits fast, rocky riffles, and is sometimes found in large pools below riffles, but only where the current is sufficient to keep the bottom free of silt (Cooper 1985). Records of this species have been made in several streams such as Conewango Creek, Brokenstraw Creek, and the Allegheny River, in Warren County and East Hickory Creek in Forest County (USDI-FWS, 1958-1974).

Mountain Brook Lamprey

This species occurs in gravel riffles and sandy runs of clean, clear high gradient streams. This non-parasitic species has a scattered north-south distribution on the west slope of the Appalachians from New York to Tennessee. It is usually found further upstream in the headwaters than its parasitic counterpart, the Ohio Lamprey (Cooper, 1983). The status of this species parallels that of the Ohio Lamprey and deterioration or destruction of the physical habitat and associated water quality have reduced its preferred habitat.

This species has documented occurrence from Spring Creek in Forest County, Pennsylvania (USDI-FWS, 1958-1974).

Gravel Chub

The Gravel chub is a Pennsylvania state listed endangered species. It prefers gravel-bottomed streams and rivers, preferably slow-moving and deep, but if the gravel becomes silted over, they will move into faster, shallow regions (Hubbs and Crowe, 1975). The biology of this species is unknown. This species historically occurs in the upper Allegheny River on the Allegheny National Forest (Wild Resource Conservation Fund, 1995). Collections of this species have been made in the Allegheny River, Warren Co., approximately 2-3 miles west of Warren, PA. (USDI-FWS, 1958-74).

Channel Darter

The Channel darter is a Pennsylvania state listed threatened species. This species spawns in spring to mid-summer in areas downstream from large stones scattered over a clean sand, small gravel bottom (Wild Resource Conservation Fund, 1995). This species of darter is tolerant to turbidity and is often found associated with the logperch *Percina caprodes* and the mimic shiner *Notropis volucellus*. The channel darter shows sexual dimorphism, with the male being larger than the female (Cooper, 1983). Collections of this species have been made in the Allegheny River, Warren Co., PA. near the Kinzua Dam (Andersen, 1975).

Gilt Darter

The gilt darter is a Pennsylvania state listed threatened species. This species of darter lives in riffles of small to moderate-sized rivers (Page, 1983) with a moderate to fast current flowing over gravel-rubble bottoms. The middle to lower sections of riffles and pools are preferred (Wild Resource Conservation Fund, 1995). This species shows sexual dimorphism with the male being larger than the female (Page, 1983). Historically, this species was found in the upper Allegheny River and collections have been made in the Allegheny River, Warren Co., PA. in the vicinity of Kinzua Dam (USDI-FWS, 1958-1974) and in the Tidioute area (Lee, 1971). It was recently collected in South Branch Kinzua Creek (Woomer and Lee, 1994) and Chappel Fork (Woomer and Lee 1991).

DESCRIPTION OF ALTERNATIVES

Three alternatives are considered in detail in the Environmental Impact Statement. A description of each alternative follows.

Alternative 1 - Proposed Action

Alternative 1 amends Forest Plan standards and guidelines related to five T&E species. Three S&G's are revised, twelve S&G's are added, and one S&G is dropped. Additionally the reference to bald eagle is dropped from one S&G. The monitoring plan will be amended to include monitoring requirements for four additional species and will modify requirements for bald eagles. The purpose of these changes are to ensure that the Forest Plan standards and guidelines reflect the requirements of the BO and the additional measures outlined in the ANF Conservation Program such that adequate protection is given to these species and their habitats. Recreational boating opportunities will continue to be provided. Zebra mussel screening to protect populations of Clubshell mussel and Northern riffleshell mussel will be implemented. Decontamination information will be available for boat users.

Under Alternative 1, all existing Forest Plan standards and guidelines not being modified would remain in effect. Items included in the BO and in the ANF Conservation Program which are consistent with existing Forest Plan direction and implemented through administrative action or under existing program management would be adopted. See Appendix A.

The additions to Forest Plan standards and guidelines under Alternative 1 are presented in Table 3. Monitoring requirements for each species are displayed in Table 4.

Table 3. Additions to Standards and Guidelines in Alternative 1 – Preferred Alternative

Bald Eagle

Habitat Protection And Enhancement

1. The following buffer zones and time of year restrictions shall apply to Bald eagle nests, including those abandoned for ≤ 3 years*:
 - a. Year-round, all activities that may disturb eagles or significantly alter habitat including, but not limited to, timber harvesting, land clearing, federal oil and gas development, road construction and operation, and trail construction and operation, shall be prohibited within a zone extending at least 660 feet from the nest. This prohibition does not apply to the implementation of measures that are necessary to protect or monitor the nest.
 - b. From January 15 to July 31 of each year, people and aircraft (under FS control) should not be allowed within 660 feet of the nest. This distance should be increased if topography and/or vegetation permit a direct line-of-sight from the nest to potential activities. This prohibition does not apply to qualified persons conducting necessary eagle research and management.
 - c. From August 1 to January 14 of each year, hunting, fishing, and other recreational activities are allowable within 660 feet of the nest; however, these activities should be restricted within 330 feet of the nest.
 - d. From January 15 to July 31 of each year restrict management activities that result in disturbance to nesting birds within approximately 1,320 feet of each active nest location. Examples of management activities that should be restricted include road and trail construction and maintenance, timber cutting and hauling and federal oil and gas development, etc.

* Abandoned nests include those nests abandoned for any reason (e.g. movement of adults, fallen nest tree, fallen nest, and damaged nest).

2. Three or more super-canopy trees should be identified and maintained within one-quarter mile of each nest as roosting and perching sites. These trees may be large white pines, dead deciduous trees, or trees with dead or broken tops.
3. On the side slopes surrounding the Allegheny Reservoir and on the side slopes along the Allegheny River, Tionesta Creek, Clarion River, Kinzua Creek, and Salmon Creek maintain scattered white pines and other trees with potential for use as nesting or roosting trees. Consider not only trees that are super-canopy trees but also trees that may provide nesting or roosting sites in the future, such that a sustainable supply will be available.

Abandoned Nest Trees

4. When a nest is classified as a remnant, that is, one that has been unoccupied for five consecutive years, and is not being maintained by eagles, retain only the 330-foot buffer zone. Prohibit disturbances within this buffer zone as stated in #1.

Roosting Areas

5. Bald eagle roosting areas shall be identified and protected. Activities that may result in the incidental take of roosting eagles or degradation of roosting habitat shall be restricted within 0.25 mile (1,320 feet) of identified roosting sites.

Indiana Bat

Habitat Protection and Enhancement

6. This species was found to occur within the Allegheny National Forest in August 1998. Summer roost and foraging habitat is found in great abundance throughout the ANF. Habitat for this species will be provided through implementation of standards and guidelines. The following standards and guidelines provide specific diameter requirements for live and dead trees that provide habitat for Indiana bat. Trees retained to fulfill snag and den tree requirements (see Forest Plan pg 4-32) can also be counted towards these requirements.
7. For both partial and final harvests in green units (harvested material consists primarily of live, healthy trees) retain all snags. Retain at least 8-15 live trees ≥ 9 inches d.b.h. per acre in final harvest units, and at least 16 live trees ≥ 9 inches d.b.h. per acre in partial harvest units.
8. For both partial and final harvests in salvage units (dead or dying trees make up 50 percent or more of the harvested volume), and clear-cut, retain at least 5-10 snags ≥ 9 inches d.b.h. per acre, and of these one snag ≥ 16 inches d.b.h. per two acres. Also retain at least 16 live trees ≥ 9 inches d.b.h. per acre, and 3 live trees ≥ 20 inches d.b.h. per acre in partial harvest units; and retain at least 8-15 live trees ≥ 9 inches d.b.h. per acre, and 1 live tree ≥ 20 inches d.b.h. per acre in final harvest units and clear-cut.
9. Live residual trees to be retained under #s 7, 8, and 10 shall, where available, be Class 1 or Class 2 trees (as identified by Romme et al., 1995), or other trees exhibiting or likely to develop characteristics preferred by Indiana bats (e.g., exfoliating bark).
10. Designate and retain living residual trees in the vicinity of about 1/3 of all large diameter (≥ 12 inches d.b.h.) snags with exfoliating bark to provide them with partial shade in summer.
11. For partial/intermediate harvests (e.g., thinnings, shelterwood seed/prep, selection cuts) in healthy stands (stands where volume being removed is predominantly healthy, living trees), reduce canopy closure to >50 percent.
12. All known roost trees on the ANF will be protected until such time as they no longer serve as a roost (e.g., loss of exfoliating bark or cavities, blown down, or decay). In the event that it becomes absolutely necessary to remove a known Indiana bat roost tree, such a removal will be conducted through consultation with FWS, during the time period when the bats are likely to be in hibernation (November 15 through March 31). Trees identified as immediate threats to public safety may, however, be removed at any time following consultation with the FWS.

Protection of Individuals

13. Demolition or removal of buildings or other man-made structures that harbor bats should occur while bats are hibernating. If public safety is threatened and the building must be removed while bats are present, a bat expert should examine the building to determine if Indiana bats are present.

Clubshell Mussel And Northern Riffleshell Mussel

Protection Of Individuals

14. At the marina and boat launches on the Allegheny Reservoir, boats shall be screened for potential Zebra mussel contamination, and boats found through screening to be at risk shall be decontaminated using a FWS-approved decontamination method. These same procedures shall apply to commercial use of the boat launch at the Buckaloons Recreation Area on the Allegheny River. Screening and decontamination procedures are conducted in accordance with the Zebra mussel action plan (ANF CP), which is approved by the FWS and updated by agreement as needed.

Protection of Habitat

Concerning perennial and intermittent streams:

15. A filter strip will be maintained to minimize the movement of silt, humus, and other organic matter into the stream. The standard width is 50 feet plus 4 feet for every one degree of slope adjacent to each side of the stream or the actual size of the riparian area, whichever is larger.

Forest Plan Page #	Deletions to Standards and Guidelines
4-38	Remove Bald eagle from species listed in 10.
4-39	13. Field surveys will be conducted to determine the presence of small-whorled pogonia populations when road construction, logging, herbicide treatment, trail construction, recreation site development, and oil and gas development are proposed for areas containing suitable habitats for this species.

Alternative 2 - Close Boat Launches

Alternative 2 amends Forest Plan standards and guidelines related to five T&E species. Nine S&G's are revised, five S&G's are added. The monitoring plan will be amended to include monitoring requirements for four additional species. The purpose of these changes are to ensure that the Forest Plan S&G's reflect the requirements of the BO and the additional measures outlined in the ANF CP such that adequate protection is given to these species and their habitats. Forest Service boat launches on the Allegheny River and Allegheny Reservoir would be closed. Federally endangered, and Regionally sensitive mussels are protected from zebra mussels introduced from Forest Service boat launches on the Allegheny River and Allegheny Reservoir.

Under Alternative 2, all existing Forest Plan standards and guidelines not being modified would remain in effect. Items included in the BO and in the ANF Conservation Program that are consistent with existing Forest Plan direction and implemented through administrative action or under existing program management would be adopted.

Alternative 2 is identical to Alternative 1 with the exception of the proposed standard and guideline pertaining to the Protection of Individuals for Clubshell mussel and Northern Riffleshell mussel. It has been changed to the following for Alternative 2:

14. Avoid the possibility of zebra mussel introduction by permanently closing all developed Forest Service boating facilities located on the Allegheny River, Allegheny Reservoir, and Allegheny River tributaries. No boat screening or decontamination will be necessary.

Alternative 3 - No Action

Alternative 3 would not amend the Forest Plan to reflect needed changes in S&G's according to the requirements of the BO and the additional measures outlined in the ANF CP. Existing standards and guidelines would remain in effect. No changes to the monitoring plan are made in this alternative.

POTENTIAL IMPACTS OF EACH ALTERNATIVE

Alternative 1

Alternative 1 would ensure that existing bald eagle nest sites are adequately protected from activities that have the potential to disturb nesting eagles and reduce nesting success. By adopting buffer zone guidelines and maintaining potential nest trees as recommended in the Northern States Bald Eagle Recovery Plan, the potential for disrupting eagle productivity is reduced and the likelihood that future nesting and roosting habitat will be sustained is increased. Monitoring nesting success would continue in cooperation with the Pennsylvania Game Commission.

Increasing the number and size of snags to be retained in timber harvest units, requiring a minimum number of live trees to be larger than 9 inches and 20 inches in diameter, and selecting snags to retain that have exfoliating bark and are partially shaded would increase the suitability of harvest areas as roosting and foraging habitat for Indiana bats. Timber harvest activities that reduce canopy closure from 100 percent to 50 to 80 percent would enhance roosting and foraging habitat. Protecting known Indiana bat roost trees would ensure that potential human disturbance to females and their young pups would be minimized. These standards and guidelines would also benefit other sensitive bat species such as the Northern long-eared bat and Eastern small-footed bat by enhancing potential roosting and foraging habitat. Monitoring bat habitat use would continue under this alternative providing additional insights into habitat requirements for these species.

Current levels of timber management, trail construction, wildlife opening construction, prescribed burning, road construction and reconstruction, and mineral development could potentially harm individual Indiana bats. However, the new proposed standards and guidelines for Indiana bats under this alternative would minimize the likelihood of harm to individual Indiana bats and would not jeopardize the continued existence of the species.

Clubshell Mussel And Northern Riffleshell Mussel

Protection Of Individuals

14. At the marina and boat launches on the Allegheny Reservoir, boats shall be screened for potential Zebra mussel contamination, and boats found through screening to be at risk shall be decontaminated using a FWS-approved decontamination method. These same procedures shall apply to commercial use of the boat launch at the Buckaloons Recreation Area on the Allegheny River. Screening and decontamination procedures are conducted in accordance with the Zebra mussel action plan (ANF CP), which is approved by the FWS and updated by agreement as needed.

Protection of Habitat

Concerning perennial and intermittent streams:

15. A filter strip will be maintained to minimize the movement of silt, humus, and other organic matter into the stream. The standard width is 50 feet plus 4 feet for every one degree of slope adjacent to each side of the stream or the actual size of the riparian area, whichever is larger.

Forest Plan Page #	Deletions to Standards and Guidelines
4-38	Remove Bald eagle from species listed in 10.
4-39	13. Field surveys will be conducted to determine the presence of small-whorled pogonia populations when road construction, logging, herbicide treatment, trail construction, recreation site development, and oil and gas development are proposed for areas containing suitable habitats for this species.

Table 4. Additions to Forest Plan Monitoring Plan

Source and Purpose of Monitoring Action	Activity Effect Practice Output	Unit of Measure	Frequency of Measure	Techniques and/or Data Sources	Expected Precision	Expected Reliability	Responsibility
36 CFR 219.19 Monitor threatened and endangered species to protect, maintain, or enhance key habitat	Bald Eagle Indiana bat Clubshell mussel Northern Riffleshell mussel Small whorled pogonia	Nesting success, Nest productivity, Roost sites Use of hibernation Foraging, roost, maternity and pre-hibernation habitat Potential impacts to habitat quality Potential impacts to habitat quality Identify high potential habitat and survey for the occurrence of plants	Annual Annual Annual Annual Annual	Field surveys Field surveys Water quality monitoring Water quality monitoring GIS and focused field surveys	Moderate Moderate Moderate Moderate	Moderate Moderate Moderate Moderate	Allegheny National Forest Allegheny National Forest Allegheny National Forest Allegheny National Forest

Alternative 2 - Close Boat Launches

Alternative 2 amends Forest Plan standards and guidelines related to five T&E species. Nine S&G's are revised, five S&G's are added. The monitoring plan will be amended to include monitoring requirements for four additional species. The purpose of these changes are to ensure that the Forest Plan S&G's reflect the requirements of the BO and the additional measures outlined in the ANF CP such that adequate protection is given to these species and their habitats. Forest Service boat launches on the Allegheny River and Allegheny Reservoir would be closed. Federally endangered, and Regionally sensitive mussels are protected from zebra mussels introduced from Forest Service boat launches on the Allegheny River and Allegheny Reservoir.

Under Alternative 2, all existing Forest Plan standards and guidelines not being modified would remain in effect. Items included in the BO and in the ANF Conservation Program that are consistent with existing Forest Plan direction and implemented through administrative action or under existing program management would be adopted.

Alternative 2 is identical to Alternative 1 with the exception of the proposed standard and guideline pertaining to the Protection of Individuals for Clubshell mussel and Northern Riffleshell mussel. It has been changed to the following for Alternative 2:

14. Avoid the possibility of zebra mussel introduction by permanently closing all developed Forest Service boating facilities located on the Allegheny River, Allegheny Reservoir, and Allegheny River tributaries. No boat screening or decontamination will be necessary.

Alternative 3 - No Action

Alternative 3 would not amend the Forest Plan to reflect needed changes in S&G's according to the requirements of the BO and the additional measures outlined in the ANF CP. Existing standards and guidelines would remain in effect. No changes to the monitoring plan are made in this alternative.

POTENTIAL IMPACTS OF EACH ALTERNATIVE

Alternative 1

Alternative 1 would ensure that existing bald eagle nest sites are adequately protected from activities that have the potential to disturb nesting eagles and reduce nesting success. By adopting buffer zone guidelines and maintaining potential nest trees as recommended in the Northern States Bald Eagle Recovery Plan, the potential for disrupting eagle productivity is reduced and the likelihood that future nesting and roosting habitat will be sustained is increased. Monitoring nesting success would continue in cooperation with the Pennsylvania Game Commission.

Increasing the number and size of snags to be retained in timber harvest units, requiring a minimum number of live trees to be larger than 9 inches and 20 inches in diameter, and selecting snags to retain that have exfoliating bark and are partially shaded would increase the suitability of harvest areas as roosting and foraging habitat for Indiana bats. Timber harvest activities that reduce canopy closure from 100 percent to 50 to 80 percent would enhance roosting and foraging habitat. Protecting known Indiana bat roost trees would ensure that potential human disturbance to females and their young pups would be minimized. These standards and guidelines would also benefit other sensitive bat species such as the Northern long-eared bat and Eastern small-footed bat by enhancing potential roosting and foraging habitat. Monitoring bat habitat use would continue under this alternative providing additional insights into habitat requirements for these species.

Current levels of timber management, trail construction, wildlife opening construction, prescribed burning, road construction and reconstruction, and mineral development could potentially harm individual Indiana bats. However, the new proposed standards and guidelines for Indiana bats under this alternative would minimize the likelihood of harm to individual Indiana bats and would not jeopardize the continued existence of the species.

As described in the BO, continued implementation of the Forest Service marinas, boat launches, and canoe access sites on the Allegheny River, Allegheny Reservoir, and Allegheny River tributaries is likely to jeopardize the continued existence of the Northern riffleshell mussel. Without measures to reduce the spread of Zebra mussels, both the survival and recovery of the Northern riffleshell is unlikely since one of only two known reproducing and viable populations occurs within and downstream of the ANF.

Under Alternative 1, boats being launched from Forest Service launches and marinas on the Allegheny Reservoir and Allegheny River would be screened to ensure that they are not contaminated with zebra mussels. Boats which have recently been in waters where zebra mussels are present would be required to be decontaminated. These measures should mitigate the potential introduction of zebra mussels through an ANF operated boat launch.

However, zebra mussels may still spread throughout the watershed as a result of contaminated boats being launched at state, private, tribal, and other federal launches, and by waterfowl, bait buckets, and veliger movement during high flows from an upstream infested source such as Chautauqua Lake in New York (Chautauqua Lake flows into Conewango Creek and then into the Allegheny River). These small non-native mussels can attach to native mussels and, in large enough numbers, can disrupt feeding, movement, and reproduction, resulting in death generally within one to two years. Water quality conditions and water velocity in the Allegheny River are suitable for zebra mussel colonization. Currently, several monitoring stations in Conewango Creek, the Allegheny River and Allegheny Reservoir have not detected zebra mussels in the upper Allegheny watershed portion of Pennsylvania.

Zebra mussels feed on algae and could upset the ecological balance in the river system. Scientific studies on the potential impacts of zebra mussels on small bottom-dwelling fish, such as the sensitive darters in the Allegheny River, are lacking. The result is uncertainty for the potential impacts of zebra mussels on fish and other aquatic species. Although information is limited on the potential effects to the sensitive fishes, it is not expected that should zebra mussels inhabit the reservoir or river, that it would cause a trend toward federal listing. The reason is that these fish have a wide distribution, extending beyond Pennsylvania.

The effects to macroinvertebrates (such as sensitive dragonflies) is also relatively uncertain. On the St. Lawrence River, Ricciardi *et al.* (1996) found that dense zebra mussel colonies restructured macroinvertebrate communities on hard substrates by enhancing populations of deposit feeders, small scrapers, and predators, and by reducing or displacing populations of large filter-feeding organisms. Since the sensitive dragonflies occur on streams smaller than the Allegheny River where zebra mussels would find less than optimum conditions, impacts are not likely to reach a level resulting in a trend toward federal listing.

The Long-solid mussel could also be impacted by zebra mussels entering the river system from private, state, tribal or other federal lands. However, because the Long-solid mussel occurs in Tionesta Creek as well as Muskingum River system in Ohio, an introduction of zebra mussels into the Allegheny River is not likely to cause a trend toward federal listing.

Sediment monitoring on ANF tributaries draining directly into the Allegheny River would help determine what contribution the ANF is making to sediment loads in the river. This monitoring may help pinpoint sources of sedimentation on the ANF and may lead to corrective actions. Ensuring that sedimentation remains low and water quality remains high would benefit the Clubshell mussel and Northern riffleshell mussel, and could potentially benefit the sensitive dragonflies, the sensitive fish species, the Longsolid mussel, and the northern water shrew.

The remaining sensitive species would not be adversely affected by the adoption of the new standards and guidelines and monitoring requirements proposed under Alternative 1. Timber rattlesnake denning sites would continue to be identified and protected during initial project design. Yellow-bellied flycatchers that primarily nest in wet sphagnum areas would not be impacted. Maintaining the integrity of riparian areas along streams and ensuring that water quality remains high would benefit Northern water shrews, Wiegand's sedge, Creeping snowberry, Thread rush, and Rough cottongrass. The Small-whorled pogonia, is not known to occur on the ANF and therefore would not be affected. Butternut would continue to be identified and protected during initial project design.

Alternative 2

Under Alternative 2, impacts to Federally proposed, threatened, and endangered species and regionally sensitive species would be similar to those under Alternative 1. The difference between these two alternatives is the method by which zebra mussels would be kept from spreading through the Allegheny watershed. Under Alternative 1, boats would be screened and sent to decontamination facilities, whereas, under Alternative 2 the Forest Service boat launches on the Allegheny Reservoir and Allegheny River would be closed. The potential for zebra mussels to enter the Allegheny River through state, private, tribal, and other federal boat launches as well as drifting downstream from Chautauqua Lake also remains a possibility under this alternative.

Alternative 3

Alternative 3 would not adopt any of the new standards and guidelines included in Alternatives 1 and 2. New protection measures for threatened and endangered species recommended in the BO by the Fish and Wildlife Service would not be included in the Forest Plan and, therefore, would not be required.

For bald eagles, nest protection would not be in line with the seasonal restrictions and buffer zones recommended in the Recovery Plan. This could increase the potential for a disturbance too close to a nest, causing nest abandonment or loss of productivity. Existing nests and the highest probability habitat for new nests are in Management Areas 6.1, and 6.4, where conflicts with timber harvest and other forest management activities would be minimal. The likelihood of an eagle nest being disturbed is remote. In the event that a roosting area is identified, the existing Forest Plan would not specifically require its protection. Standards for providing roosting and perching sites by maintaining three or more supercanopy trees within one-quarter mile of each nest site would not be required under this alternative. Maintaining scattered white pines and other trees in the major drainages that could become future nesting or roosting trees would not be required. In summary, the Forest Plan would lack the specific nesting and roosting measures for eagles, but because the existing nest locations and high potential areas for future roosting and nesting are in Management Areas where few forest management activities occur, the potential impact to bald eagles is minor. The BO estimated that under the current Forest Plan direction, the possibility exists for up to one bald eagle to be "incidentally taken" annually (BO, p. 65).

For Indiana bats, the current Forest Plan standards and guidelines would ensure that enough snags and live trees are retained during timber harvest operations to provide roosting sites. However, current Forest Plan direction does not contain a diameter size requirement. Since Indiana bat maternity roosts are usually in large snags (>9" dbh), current Forest Plan direction does not provide the emphasis on maintaining large snags. This lack of attention to maintaining the large snags could result in some high potential roost sites being lost during forest management activities. The potential of harming individual bats by not retaining large snags is greater under Alternative 3 than under Alternatives 1 and 2. No size requirement for retaining live and dead trees would also be less beneficial to the Northern long-eared bat than Alternatives 1 and 2. Since timber harvest occurs on less than three percent of the ANF annually, the overall impact of no size requirement for live and dead trees to bat habitat is negligible.

As described in the BO, continued implementation of the Forest Service marinas, boat launches, and canoe access sites on the Allegheny River, Allegheny Reservoir, and Allegheny River tributaries is likely to jeopardize the continued existence of the Northern riffleshell mussel. Without measures to reduce the spread of Zebra mussels, both the survival and recovery of the Northern riffleshell is unlikely since one of only two known reproducing and viable populations occurs within and downstream of the ANF. Impacts to all other federally proposed, threatened, and endangered species and Regionally sensitive species would be the same as Alternative 1.

No efforts to mitigate the spread of Zebra mussels through ANF boat launches into the Allegheny watershed would be made under Alternative 3. Zebra mussels may still spread throughout the watershed as a result of no inspections occurring on state, private, tribal, or other federal boat launches. Zebra mussels could smother native mussel beds including the Clubshell and Northern riffleshell.

Since Zebra mussels feed on algae, a large infestation could disrupt the ecological balance of the aquatic system. Sceintific studies on the potential impacts of zebra mussels on small bottom-dwelling fish, such as the sensitive darters in the Allegheny River, are lacking. The result is uncertainty for the potential impacts of zebra mussels on fish and other aquatic species. The effects to macroinvertebrates (such as sensitive dragonflies) is also relatively uncertain. On the St. Lawrence River, Ricciardi *et al.* (1996) found that dense Zebra mussel colonies restructured macroinvertebrate communities on hard substrates by enhancing populations of deposit feeders, small scrapers, and predators, and by reducing or displacing populations of large filter-feeding organisms. Since the sensitive dragonflies occur on streams smaller than the Allegheny River where Zebra mussels would find less than optimum conditions, impacts are not likely to reach a level resulting in a trend toward federal listing.

The Long-solid mussel could also be impacted by Zebra mussels entering the river system from private, state, tribal or other federal lands. However, because the Long-solid mussel occurs in Tionesta Creek as well as Muskingum River system in Ohio, an introduction of Zebra mussels into the Allegheny River is not likely to cause a trend toward federal listing.

CUMULATIVE EFFECTS

This cumulative effects analysis considers past, present, and future actions under each alternative and how these actions affect federally proposed, threatened, and endangered species and regionally sensitive species on the Allegheny National Forest. Although potential cumulative effects include impacts associated with private lands, the Forest Service does not plan, fund, permit or execute actions on private lands.

Under all alternatives there is a risk of zebra mussels entering the Allegheny River and Allegheny Reservoir from state, private, tribal, and federal boat launches as well as from moving downstream from Chautauqua Lake. This zebra mussel invasion could impact both the Clubshell and Northern riffleshell mussel. Impacts to the sensitive darters, dragonflies, and long-solid mussel remain uncertain. Alternatives 1 and 2 are designed to mitigate the potential introduction of zebra mussels through ANF boat launches by screening boats and placing signs at Forest Service boat launches (Alt. 1) or closing Forest Service boat launches (Alt. 2). None of the alternatives eliminates the risk of zebra mussels entering the Allegheny River or Reservoir from state, private, tribal or other federal boat launches, nor the cumulative risk of impact to the Clubshell and Northern riffleshell mussel from these non-Forest Service facilities.

Alternative 1

The standards and guidelines proposed under Alternative 1 would result in protection of present and future bald eagle nests throughout the ANF. The number of eagle nests and productivity of nests should continue to increase. Nesting, foraging, and roosting habitat quality would increase. A better understanding of Bald eagle ecology would result from continued monitoring of nests and by identifying roosts.

High quality Indiana bat roosting and foraging habitat would continue to be sustained across the forest landscape as large live and dead trees are retained and overstory canopy closures are managed through timber harvest. The risk of harming individual bats is minimized resulting in a non-jeopardy situation. Northern long-eared bats would benefit from these enhanced forest conditions. Continued monitoring of bat habitat use will substantially increase our understanding of bat ecology, resulting in fine tuning of habitat management for bats.

Zebra mussel screening at Forest Service boat launches on the Allegheny River and Allegheny Reservoir would reduce the risk of Zebra mussels entering the upper Allegheny watershed by way of Forest Service facilities causing impacts to the Northern riffleshell mussel and Clubshell mussel. There remains a risk of Zebra mussels entering the Allegheny River from Chautauqua Lake or from boat launches on private, state, or other federal launches. This risk of zebra mussels entering the Allegheny River from sources other than the ANF will likely result in an impact to the Northern riffleshell and Clubshell mussels. The cumulative impact to the sensitive fish, Long-solid mussel, and sensitive dragonflies remains relatively uncertain.

Continuation of sediment monitoring on ANF tributaries draining directly into the Allegheny River will help ensure that management activities on the ANF do not cause impacts to Clubshell mussel and Northern riffleshell mussel beds in the Allegheny River.

Cumulative impacts to other species included in this analysis are not anticipated under Alternative 1.

Alternative 2

Cumulative effects under Alternative 2 would be similar to those under Alternative 1. The risk of Zebra mussels entering the upper Allegheny River by way of Forest Service boat launches is slightly less under this alternative since the launches would be closed.

Alternative 3

Bald eagle populations would continue to expand on the ANF under Alternative 3. Road construction and timber harvesting too close to a nest could cause a disturbance that would result in a loss of productivity. The likelihood of nest disturbance occurring is very small and would not result in a cumulative impact. Monitoring nests would continue resulting in a better understanding of eagle ecology.

Some loss of large roost trees for Indiana bats could occur under this alternative, since retention of large live and dead trees is not a requirement under the current Forest Plan. However, suitable Indiana bat roosting and foraging habitat would be sustained across the landscape. The risk of harm to individual bats would slightly increase with a slight increased risk of felling an active roost tree. However this risk remains small because Indiana bats appear to be rare on the ANF.

The risk of Zebra mussels entering the upper Allegheny watershed from a Forest Service boat launch would be highest under this alternative. This risk combined with the risk of a Zebra mussel invasion from private, state, tribal, or other federal sources results in the continuation of a jeopardy situation for the Northern riffleshell and could potentially impact the Clubshell mussel. The cumulative impact to sensitive fish, dragonflies and the Long-solid mussel remains uncertain.

DETERMINATIONS

Timber rattlesnake - No adverse impact under any alternative.

Bald eagle - No adverse affects beyond those described in the Biological Opinion under Alternatives 1 and 2. Potential "may affect" under Alternative 3.

Yellow-bellied flycatcher - No adverse impact under any alternative.

Indiana bat - No adverse affects beyond those described in the Biological Opinion for Alternative 1 and 2. "May affect" under Alternative 3.

Northern long-eared bat - Slight risk that individuals could be harmed under all alternatives, but this loss would not cause a trend toward federal listing.

Northern water shrew - No adverse impact under any alternative.

Clubshell mussel - No adverse affects from Forest Service actions beyond those described in the Biological Opinion under Alternatives 1 and 2. "May affect" under Alternative 3 for Forest Service actions. The risk of introducing zebra mussels remains if no action to control zebra mussels is taken on private, state, tribal and other federal lands under all three alternatives.

Northern riffleshell mussel - No adverse affect from Forest Service actions beyond those described in the Biological Opinion under Alternatives 1 and 2. "May affect" under Alternative 3 for Forest Service actions. The risk of introducing zebra mussels remains if no action to control zebra mussels is taken on private, state, tribal and other federal lands under all three alternatives.

Green-faced clubtail - For Forest Service actions, no adverse impact under Alternatives 1 and 2. Although information is limited, potential for adverse impacts from zebra mussels under Alternative 3 is expected to be

minor and would not likely cause a trend toward federal listing. For non-Forest Service actions, the risk of introducing zebra mussels remains if no action to control zebra mussels is taken on private, state, tribal and other federal lands under all three alternatives.

Long-solid mussel - For Forest Service actions, no adverse impact under Alternatives 1 and 2. Although information is limited, potential for adverse impacts from zebra mussels under Alternative 3 is expected to be minor and would not likely cause a trend toward federal listing. For non-Forest Service actions, the risk of introducing zebra mussels remains if no action to control zebra mussels is taken on private, state, tribal and other federal lands under all three alternatives.

Harpoon clubtail - For Forest Service actions, no adverse impact under Alternatives 1 and 2. Although information is limited, potential for adverse impacts from zebra mussels under Alternative 3 is expected to be minor and would not likely cause a trend toward federal listing. For non-Forest Service actions, the risk of introducing zebra mussels remains if no action to control zebra mussels is taken on private, state, tribal and other federal lands under all three alternatives.

Rapids clubtail - For Forest Service actions, no adverse impact under Alternatives 1 and 2. Although information is limited, potential for adverse impacts from zebra mussels under Alternative 3 is expected to be minor and would not likely cause a trend toward federal listing. For non-Forest Service actions, the risk of introducing zebra mussels remains if no action to control zebra mussels is taken on private, state, tribal and other federal lands under all three alternatives.

Mustached clubtail - For Forest Service actions, no adverse impact under Alternatives 1 and 2. Although information is limited, potential for adverse impacts from zebra mussels under Alternative 3 is expected to be minor and would not likely cause a trend toward federal listing. For non-Forest Service actions, the risk of introducing zebra mussels remains if no action to control zebra mussels is taken on private, state, tribal and other federal lands under all three alternatives.

Midland clubtail - For Forest Service actions, no adverse impact under Alternatives 1 and 2. Although information is limited, potential for adverse impacts from zebra mussels under Alternative 3 is expected to be minor and would not likely cause a trend toward federal listing. For non-Forest Service actions, the risk of introducing zebra mussels remains if no action to control zebra mussels is taken on private, state, tribal and other federal lands under all three alternatives.

Ski-tailed emerald - For Forest Service actions, no adverse impact under Alternatives 1 and 2. Although information is limited, potential for adverse impacts from zebra mussels under Alternative 3 is expected to be minor and would not likely cause a trend toward federal listing. For non-Forest Service actions, the risk of introducing zebra mussels remains if no action to control zebra mussels is taken on private, state, tribal and other federal lands under all three alternatives.

Uhler's sundragon - For Forest Service actions, no adverse impact under Alternatives 1 and 2. Although information is limited, potential for adverse impacts from zebra mussels under Alternative 3 is expected to be minor and would not likely cause a trend toward federal listing. For non-Forest Service actions, the risk of introducing zebra mussels remains if no action to control zebra mussels is taken on private, state, tribal and other federal lands under all three alternatives.

Maine snaketail - For Forest Service actions, no adverse impact under Alternatives 1 and 2. Although information is limited, potential for adverse impacts from zebra mussels under Alternative 3 is expected to be minor and would not likely cause a trend toward federal listing. For non-Forest Service actions, the risk of introducing zebra mussels remains if no action to control zebra mussels is taken on private, state, tribal and other federal lands under all three alternatives.

Zebra clubtail - For Forest Service actions, no adverse impact under Alternatives 1 and 2. Although information is limited, potential for adverse impacts from zebra mussels under Alternative 3 is expected to be minor and would not likely cause a trend toward federal listing. For non-Forest Service actions, the risk of introducing zebra mussels remains if no action to control zebra mussels is taken on private, state, tribal and other federal lands under all three alternatives.

Small-whorled pogonia - No adverse affect under any alternative

Wiegand's sedge - No adverse impact under any alternative

Butternut - No adverse impact under any alternative

Creeping snowberry - No adverse impact under any alternative

Thread rush - No adverse impact under any alternative

Rough cotton-grass - No adverse impact under any alternative

Spotted darter - For Forest Service actions, no adverse impact under Alternatives 1 and 2. Although information is limited on the potential impacts from zebra mussels under Alternative 3, any affects to the population is not likely to cause a trend toward federal listing. For non-Forest Service activities, the risk of introducing zebra mussels remains if no action to control zebra mussels is taken on private, state, tribal and other federal lands under all three alternatives.

Tippecanoe darter -For Forest Service actions, no adverse impact under Alternatives 1 and 2. Although information is limited on the potential impacts from zebra mussels under Alternative 3, any affects to the population is not likely to cause a trend toward federal listing. For non-Forest Service activities, the risk of introducing zebra mussels remains if no action to control zebra mussels is taken on private, state, tribal and other federal lands under all three alternatives.

Longhead darter - For Forest Service actions, no adverse impact under Alternatives 1 and 2. Although information is limited on the potential impacts from zebra mussels under Alternative 3, any affects to the population is not likely to cause a trend toward federal listing. For non-Forest Service activities, the risk of introducing zebra mussels remains if no action to control zebra mussels is taken on private, state, tribal and other federal lands under all three alternatives.

Mountain brook lamprey - No adverse impact under any alternative.

Gravel chub - For Forest Service actions, no adverse impact under Alternatives 1 and 2. Although information is limited on the potential impacts from zebra mussels under Alternative 3, any affects to the population is not likely to cause a trend toward federal listing. For non-Forest Service activities, the risk of introducing zebra mussels remains if no action to control zebra mussels is taken on private, state, tribal and other federal lands under all three alternatives.

Channel darter - For Forest Service actions, no adverse impact under Alternatives 1 and 2. Although information is limited on the potential impacts from zebra mussels under Alternative 3, any affects to the population is not likely to cause a trend toward federal listing. For non-Forest Service activities, the risk of introducing zebra mussels remains if no action to control zebra mussels is taken on private, state, tribal and other federal lands under all three alternatives.

Gilt darter - For Forest Service actions, no adverse impact under Alternatives 1 and 2. Although information is limited on the potential impacts from zebra mussels under Alternative 3, any affects to the population is not likely to cause a trend toward federal listing. For non-Forest Service activities, the risk of introducing zebra mussels remains if no action to control zebra mussels is taken on private, state, tribal and other federal lands under all three alternatives.

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APPENDIX E

ALLEGHENY NATIONAL FOREST FOREST PLAN ANALYSIS SUMMARY AND UNEVEN-AGED MANAGEMENT CONSIDERATIONS FOR PROJECT ANALYSES FROM FOREST PLAN IMPLEMENTATION AND MONITORING

MANAGEMENT AREAS 1, 2, 3, AND 6.2

April 16, 1998

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ALLEGHENY NATIONAL FOREST

**FOREST PLAN ANALYSIS SUMMARY AND
UNEVEN-AGED MANAGEMENT CONSIDERATIONS
FOR PROJECT ANALYSES FROM FOREST PLAN
IMPLEMENTATION AND MONITORING**

MANAGEMENT AREAS 1, 2, 3, AND 6.2

A. INTRODUCTION

This document provides a summary of the consideration given in the Forest Plan analysis to the use of uneven-aged management (UEAM) versus even-aged management (EAM) on the Allegheny National Forest (ANF). It also briefly mentions Forest Plan direction for using both silvicultural systems in Management Areas (MA) 1, 2, 3, and 6.2, which constitute the majority of the area on the ANF where timber harvesting occurs. Finally, it summarizes what we have learned about reforestation success for each silvicultural system as we have implemented the Forest Plan and presents some conclusions for consideration by decisionmakers when selecting the preferred alternative for specific projects.

B. FOREST PLAN ANALYSIS

Forest Plan Took a Detailed Look at Local Uneven-aged Management Versus Even-aged Management Tradeoffs

Specific planning issues regarding EAM versus UEAM (Forest Plan FEIS, Ch. 1, pp. 8, 11 to 13; pp. A-20 and 21, pp. C-44, 45, 47, 52).

Analysis considered even-aged and uneven-aged management as options on all acres except where use was restricted by law (Forest Plan FEIS, Appendix B, pp. 9, 51, and 63)

Site-specific vegetation and landform data was used in analysis (Forest Plan FEIS, Appendix B, pp. 6 to 16, 20 to 37, and 69 to 112)

Even-aged and uneven-aged prescriptions were developed to similar level of detail (Forest Plan FEIS, Appendix B, pp. 42 to 75) and contained local values for ANF conditions (Forest Plan FEIS, Appendix B, pp. 17 to 75).

Extensive analysis shows major differences develop from selecting EAM vs. UEAM -

- EAM and UEAM favor different tree species (Forest Plan FEIS, Ch. 4, pp. 21 to 23, 26 and 29) with different values and benefits (Forest Plan, Appendix D, pp. 12 and 13).
- EAM and UEAM produce different forest structure (Forest Plan FEIS, Ch. 4, pp. 21 and 29).
- Must harvest more acres with UEAM to get total harvest volume similar to EAM (contrast Alternatives D and E) (Forest Plan FEIS, Ch. 2, pp. 61 and 76; ROD, pp. 15 and 16).
- More herbicide treatment with UEAM to get similar harvest volume (Forest Plan, FEIS, Ch. 4, p. 38; Appendix B, pp. 225 and 226; ROD, p. 17).
- Each favor a different mix of wildlife species (Forest Plan FEIS, Ch. 4, pp. 22, 23 and 29; ROD, pp. 18 and 22 to 23).
- Deer browsing more pronounced on slow-growing species favored in UEAM (Forest Plan FEIS, Ch. 4, p. 27; Forest Plan, Appendix D, p. 9).

EAM is much more cost efficient than UEAM (Forest Plan FEIS, Appendix B, pp. 27 to 30) meaning much less concern about below cost timber sales (Forest Plan FEIS, Appendix C, p. 52; ROD, p. 15).

Benchmark analysis (defined in Forest Plan FEIS, Appendix B, p. 123) to determine maximum responses to problems included zero to 82,700 acres of UEAM (see prescription 2/2.21 acres) (Forest Plan FEIS, Appendix B, pg 158 and 160).

Wide Range of UEAM Alternatives Considered in the Forest Plan FEIS

Forest Plan FEIS evaluated five alternatives (alternative defined in Forest Plan, FEIS, Appendix B, pp. 163 to 165), each a unique mix of management prescriptions assigned to specific land areas to achieve desired goals and objectives (Forest Plan FEIS, Chapter 2, pp. 2-26 to 2-45). Specific references to UEAM can be found:

- UEAM emphasized in Alternatives A and E to produce land/vegetation conditions which meet each alternative's objectives (Forest Plan FEIS, Appendix B, p. 175, 3(a) and (b), pp. 211-212, 3(a) and (b); Forest Plan FEIS, pp. 2-26, 2-43, 2-44).
- Wide variation in amount of UEAM (called MA 2 on Table 2-10) between Alternatives [6,000 acres in Alternative D, the preferred alternative, and 175,000 acres in Alternative E (Forest Plan FEIS, Ch. 2, p. 47].
- Description of land condition for each alternative (Forest Plan FEIS, Ch. 2, p. 2-46).
- Land assignment to Management Areas for each alternative and description of desired land condition (including reference to harvest method for each Management Area) (Forest Plan FEIS, Ch. 2, Table 10, p. 2-47).
- Forest Plan EIS Management Area Maps show specific sites on the ANF where UEAM (MA 2) was considered (see Forest Plan maps for Alternatives A, D, and E).

Forest Plan FEIS Environmental Consequences by Alternative

Environmental Consequences of the practice of even-aged management (EAM) are discussed in Forest Plan FEIS, Chapter 4, pp. 4-17 to 4-24.

Environmental Consequences of the practice of uneven-aged management (UEAM) are discussed in Forest Plan FEIS, Chapter 4, pp. 4-24 to 4-30.

Treatments and outputs by alternative:

- Acres of vegetation treatment (Forest Plan, FEIS, Chapter 2, Table 2-12, p. 2-61).
- Timber volume (Forest Plan, FEIS, Chapter 4, Table 4-8, p. 4-16).
- Dispersed recreation (Forest Plan, FEIS, Chapter 4, Table 2-11, p. 2-56). (Differences are due to varying amounts of UEAM vs. EAM).

Cumulative effects are unique for each alternative (Forest Plan, FEIS, Chapter 4, p. 61). Implied in this discussion is the understanding that uniqueness is a direct result of the amount of EAM vs UEAM in an alternative.

- Brief discussion (Forest Plan, ROD, p. 31).
- Table Display (Forest Plan, ROD, p. 31).

Specific references to UEAM in cumulative effects are found:

- visuals (Forest Plan FEIS, Ch. 4, pp. 4-73, 76, 77)
- roads (Forest Plan FEIS, Ch. 4, pp. 4-86, 87)

- vegetation (Forest Plan FEIS, Ch. 4, pp. 4-95 and 97)
- wildlife discussion (Forest Plan FEIS, Ch. 4, pp. 4-101, 102, 105 and 106) does not spell out UEAM; however, the condition of vegetation is a direct result of using either EAM or UEAM.

C. REGIONAL FORESTER'S CONSIDERATIONS WHEN SELECTING FOREST PLAN PREFERRED ALTERNATIVE

Decision Criteria. Many factors, including information on benefits, costs, public issues, comments on the Draft EIS, environmental effects, and responsiveness to public issues and comments were considered in making the decision that Alternative D comes nearest to providing maximum net public benefits in an environmentally sound manner (ROD, p. 6).

Effect of the decision on future project analysis. The decision to approve Alternative D narrows the scope of future environmental analyses to be performed for actions arising from the Forest Plan. Future environmental analyses will tier to the Plan's direction and the Final EIS. (ROD, p. 6).

Implementation is guided by the management area direction (MA 2, MA 3, MA 6.2) found in Chapter 4 of the Plan (Forest Plan, ROD, p. 38).

Rationale for choosing Alternative D. It is responsive to the six management problems, and it complies with 36 CFR 219.1 (a) "...The resulting plan(s) shall provide for a multiple use and sustained yield of goods and services from the National Forest System in a way that maximizes long term net public benefits in an environmentally sound manner" (ROD, p. 5). The rationale for selecting Alternative D is presented on pages 6 through 25 of the ROD.

Problem 2 - Providing Dispersed Recreation Opportunities. It offers the appropriate mix of recreation opportunities. It provides the most semi-primitive, non-motorized recreation opportunities, while still offering moderate amounts of semi-primitive motorized and roaded natural settings. (ROD, p. 11)

Problem 3 - Timber Management. Forest Plan provides the most balanced timber program, considering demands for other resource uses (ROD, p. 14)

Timber Volume. Forest Plan responds to industry and consumer demands for increased production of high quality sawtimber. This means better utilization of existing mill capacities and additional employment opportunities. (ROD, p. 14)

Though Alternative C provides the highest timber benefits, Alternative D was preferred because of the higher level it provides of wildlife habitat improvement work, the mix of recreation opportunities, and the level of trail construction. Alternative D was selected over Alternative E (which had much more uneven-aged management) because it has a stronger emphasis on quality sawtimber production.(ROD, p. 14)

With Alternative D, below cost timber sales will remain uncommon on the ANF. (ROD, p. 15)

Vegetation Treatments. Some people supported more even-aged management, others supported more uneven-aged management. Many expressed concern over the safety of herbicides. (ROD, p. 15)

Final Harvest. Final harvest (even-aged management) in Alternative D is at the middle of the range established by the other alternatives. The Forest Plan level of harvest emphasizes habitat for wildlife species requiring early successional stages of vegetation, maintaining high-value shade intolerant trees on good sites, and assuring

visual variety in the Forest landscape. (ROD, pp. 15 - 16) Even-aged silviculture will dominate (Forest Plan, ROD, p. 4).

Herbicide Use. Research and detailed, local analysis (ANF Understory Vegetation Management FEIS, March 1991) have shown that selected herbicides can be applied safely to the environment. Given current technology, herbicides are the most effective technique which can be used to control unwanted understory vegetation. (ROD, p. 16)

Alternative D calls for 2,000 acres of herbicide treatment per year in Decade 1, much lower than the Alternatives which include large amounts of uneven-aged management (Alternative A projects 31,000 acres of herbicide treatment and Alternative E projects 48,000 acres). (ROD, p. 17)

Problem 4 - Wildlife Habitat.

Big-Game Populations. Alternative D would produce the highest big-game (deer, turkey, and bear) habitat capability levels of all alternatives considered. This translates into higher big-game population levels and better hunter success. It recognizes the importance people place on these, while striving to bring these in line with habitat carrying capacity. (ROD, pp. 18 and 19)

Wildlife Habitat. The vegetative conditions created under the Forest Plan offer a balanced wildlife program. Each indicator species would be managed to at least minimum viable population levels, and the levels of many wildlife species would be increased. Horizontal diversity is maximized, and the array of habitat types is balanced (ROD, p. 24).

The Forest Plan favors those species associated with: (1) regenerating deciduous habitat, (2) regenerating hemlock habitat, and (3) old growth mixed hemlock-deciduous habitat. It leads to reduced population levels for those species requiring mature deciduous habitat type. This mix of habitat types is appropriate and will support other Forest Plan objectives associated with visual quality and recreation opportunities. (ROD, p. 24)

Potential for Controversy. "Although controversy will continue, we believe that adequate response has been made to the public issues by the range of alternatives considered..... The views of one side versus another are adequately reflected in the alternatives. The Forest Plan provides a wide range of environmental conditions and choices for goods, services and uses." (ROD, p. 26)

The controversy over the use of even-aged silviculture will continue. Based upon the acreages involved, controversy would be highest in Alternative C and lowest in Alternatives A and E. (ROD, p. 26)

The controversy over high deer populations and their effects on timber regeneration will continue. The combination of more cutting, improved habitat conditions, and lower population level targets (of the Pennsylvania Game Commission), will slowly reduce the problem and lead to a healthier deer population. (ROD, p. 26)

Economic Considerations. Present net value, net receipts, total costs, total receipts, non-cash benefits, payments to counties, and returns to the U.S. Treasury were evaluated when selecting Alternative D. Alternative D provided the optimal balance between these and other considerations. (ROD, p. 30)

Identification of the Environmentally Preferable Alternative. Based upon the summary of management practices and estimated long-term cumulative effects (ROD, p. 31), Alternative A

(which contains a large amount of uneven-aged management) would create the least disturbance to the environment. It is the environmentally preferable alternative. (ROD, p. 32)

Given this fact, however, the Forest Plan is still the best choice. Forest Plan Standards and guidelines are designed to mitigate the potential for severe environmental damage. In addition, we believe Alternative D provides the most desirable level of goods, services, and uses to the public. (ROD, p. 32)

D. FOREST PLAN DIRECTION

Descriptions of alternative future land conditions, called Management Areas, were developed (FEIS Appendix B, pp. 39 to 42) to satisfy the competing needs identified by the planning problems. Management activities on the ground within each Management Area include a common set of management practices designed to achieve the unique land condition, goals, and objectives of that Management Area (ROD, p. 5). For example, harvest practices must achieve the desired vegetation conditions established for each area. The primary silvicultural method (either even-aged or uneven-aged management) plays a key role. As with zoning ordinances, certain activities are permitted within each zone or Management Area shown on the Forest Plan map (ROD, pp. 4-54 to 4-59). No decision was made in the Forest Plan as to when activity would occur on a specific site (ROD, p. 40).

Management Area 1

This management area provides a forest of primarily hardwood stands, with interspersed conifers and openings suitable for a variety of game and non-game wildlife species associated with early successional stages of vegetation. Even-aged timber stands in a balanced variety of age and size classes, from seedling/sapling to small sawtimber, will be evident. (Forest Plan, Ch. 4, p. 60)

Even-aged management will be the featured silvicultural system used to achieve the wildlife habitat objective. (Forest Plan, Ch. 4, pp. 12 and 64)

Uneven-aged management may be an option on inclusions, such as riparian areas, wet soils, or visually sensitive areas. Its use will be based on individual site analysis. (Forest Plan, Ch. 4, p. 64)

Management Area 2

The Forest will consist primarily of uneven-aged Northern hardwood stands containing trees of a variety of ages and size classes. Species composition will be varied, but shade tolerant species will be dominant. Featured wildlife species are those associated with shade tolerant vegetation, primarily songbirds and cavity-nesting birds and mammals. (Forest Plan, Ch. 4, p. 70)

Uneven-aged management will be the featured silvicultural system, with an emphasis on producing quality sawtimber consisting of primarily shade tolerant species (Forest Plan, Ch. 4, pp. 12, 70, 75).

Even-aged management may be an option on inclusions such as aspen stands for wildlife and within visual corridors for providing variety and viewpoints (Forest Plan, Ch. 4, p. 76).

Management Areas 3 and 6.2

Activities within these areas are designed to achieve a forest which is a mosaic of predominantly hardwood stands and associated understory vegetation. Each stand consists of trees of the same age, with Allegheny hardwoods and oak as the dominant species. (Forest Plan, Ch. 4, pp. 11, 12, 82, 83, 125, and 126; FEIS, Appendix B, pp. 53 and 54)

Even-aged management will be the primary harvest technique, with management emphasizing production of high value, high quality, Allegheny hardwoods and oaks. (Forest Plan, Ch. 4, pp. 82 and 125)

Uneven-aged management may be an option on inclusions, such as riparian areas, wet soils, or visually sensitive areas. Its use will be based on individual site analysis (Forest Plan, Ch 4, pp. 87 and 131). Table 4-13 (Forest Plan, p. 4-84) and Table 4-19 (p. 4-127) reflect no UEAM acreage estimates since it was expected to be a minor part of total harvest activity.

Rationale for Selecting Silvicultural System

Timber harvests are designed to achieve a number of resource management objectives, including developing desired visual conditions, species composition, wildlife habitat, timber product mix, and revenues (Forest Plan, Appendix D, p. 1).

E. FOREST PLAN IMPLEMENTATION

Definition. Implementation is the process used to achieve, on the ground, the desired future conditions and management direction described in the Forest Plan for each management area. (FEIS, Appendix B, p. 2; ROD, pp. 37, 38; Forest Plan, Ch. 5, p. 1)

To achieve the desired future condition, ANF personnel must implement the kinds and intensities of activities described in the Management Area direction, including the standards and guidelines. Significant variation from these (such as conducting large amounts of uneven-aged treatments in Management Area 3 where the objective is to have an even-aged forest) would result in achieving a different future condition, goods and services, long-term yields, or a significantly different cost efficiency. (ROD, pp. 38-39, 3-6)

Project Identification and Analysis. The Forest Plan is implemented through projects identified at specific sites (ROD, p. 38). During the project analysis, the condition of each stand is reviewed. Within the boundaries of the Forest Plan direction and the capability of each site, stand management options are considered which would contribute to helping the project area achieve the desired future condition and produce the projected goods and services. (ROD, pp. 5 and 38)

F. WHAT HAVE WE LEARNED DURING FOREST PLAN IMPLEMENTATION

Legal Requirement for Monitoring and Evaluation

Evaluate implementation on a sample basis to determine how well objectives have been met and how closely management standards have been applied (36 CFR 219.12).

Monitoring shall include a quantitative estimate of performance [36 CFR 219.12(k)(1)] and a determination of whether prescriptions are being implemented within the management areas assigned and as specified in the Forest Plan management direction [36 CFR 219.12(k)(2)].

In regeneration harvest areas, assure adequate tree seedlings develop within five years [36 CFR 219.12 (k)(5) and 36 CFR 219.27(c)(3)].

Summary of Results

Several species (beech, sugar maple) key to UEAM face serious insect, disease, and decline problems (ANF FY 1996 Monitoring and Evaluation Report, pp. 26 to 30).

Monitoring and evaluation show that site selection and marking to achieve structural objectives for UEAM has improved over time (ANF FY 1996 Monitoring and Evaluation Report, p. 77).

Marginal seedling development is occurring in stands treated with UEAM (ANF FY 1996 Monitoring and Evaluation Report, pp. 16, 17, 76, 77, Appendix A).

Adequate seedling development is occurring in stands treated with EAM (ANF FY 1996 Monitoring and Evaluation Report, pp. 16 and 17).

Until better regeneration results can be assured, we need to limit the application of UEAM (ANF FY 1996 Monitoring and Evaluation Report, p. 77).

Regeneration requirements for tree seedling species needed to successfully maintain uneven-aged stands over the long term are not well understood. Adaptive management and administrative studies are underway to gain a better local understanding. These kinds of studies can take an extended period of time, so results may not come quickly.

Forest Health Concerns. Local forest health concerns, which are now better understood than when the Forest Plan was prepared, raise substantial questions about the long-term feasibility of uneven-aged management on the Allegheny Plateau. Beech bark disease complex is now present on most of the ANF, and sugar maple decline and mortality is abundant on about 100,000 acres. (ANF Monitoring and Evaluation Report, pp. 26 to 30)

Harvest Values. Black cherry and red oak (both featured in even-aged management) have retained their high economic value relative to other species. For example in a September 1994 timber sale, black cherry sold for a record \$2,110 per thousand board feet. The 88 acres in the timber sale averaged \$16,300 per acre for a total value of close to \$1.5 million. The record high for black cherry of \$2,276 per thousand board feet occurred in December 1994. Recently cherry stumpage values have ranged from \$1,500 to \$1,700 per thousand board feet. These high values further increase the economic efficiency disparity demonstrated in the Forest Plan timber financial analysis (Forest Plan, Appendix B, pp. 27 to 30, and the planning records) between even-aged and uneven-aged management.

G. EVALUATION AND CONCLUSIONS.

NEPA and its implementing regulations direct the Forest Service to consider a "broad range of reasonable alternatives" during project design and analysis. Given the following considerations described in detail in previous sections of this summary, it seems prudent and reasonable to limit uneven-aged management primarily to the kinds of sites specified in the Forest Plan Management Area direction:

- knowledge gained between 1986 and 1996 regarding the marginal reforestation success expected following uneven-aged treatments,
- legal requirement to assure reforestation within five years of the UEAM regeneration harvest (36 CFR 219.27(c)(3)),
- the current 94% reforestation success rate for even-aged harvests,
- the much lower cost efficiency of UEAM,
- much lower production of high quality sawtimber with UEAM to meet public demand,
- trade-offs in the kind of wildlife habitat provided,
- the long-term need for much more herbicide use with UEAM,

- the forest health concerns, particularly regarding beech bark disease complex and sugar maple decline/mortality, for tree species featured through UEAM,
- the detailed uneven-aged analysis inherent in the Forest Plan,
- trade-offs the decisionmaker considered when selecting Forest Plan Alternative D, and
- the Forest Plan direction for each management area and for implementation.

APPENDIX F

PUBLIC COMMENTS AND FOREST SERVICE RESPONSE

This appendix displays the substantive comments received from the public and all government agencies during the 45-day comment period. The Forest Service response follows each comment. All substantive comments are displayed in Table 1. Table 2 displays the list of commentors. The government agency letters, printed in full, follow Table 2.

COMMENT ANALYSIS

The 76 letters received during the 45-day comment period were analyzed to assure all concerns would be considered. Through the analysis we identified each comment that related to the T&E Amendment, evaluated whether it was substantive in regards to the amendment, and then grouped them with other similar comments if warranted. A response for each was then prepared including making changes in the document or analysis as appropriate.

There were 42 additional comment letters (a one-page form letter) received after the 45-day comment period ended. These letters were evaluated, but no new comments were found that would add new information or issues to the record.

Most comment letters were one or two pages long. Two letters, from commentors 12 and 21 (also signed by commentors 22 and 23) are substantially longer, in-depth comment letters. They were analyzed with the other letters each receiving the same consideration. However, since large portions of these letters do not show up in the text of the comment summaries, we felt further explanation would be important to the reader. We have summarized how we analyzed the comments in these letters in the following section.

Commentor 12

Throughout the beginning of this letter, the commentor asked for definitions and presented several pages of his own terms with definitions. He expressed a concern both here and throughout the document for understanding the definitions of terms being used. In response, we have improved the glossary and provided additional references for definitions of the more commonly used terms.

On pages 15 through 34, the Commentor provided 237 numbered points from which our evaluation identified 45 comments related to the T&E Amendment. The remaining points were determined to be either more comments regarding definitions or statements and questions on subjects not related to the project analysis or the decision being made.

The rest of the letter contained 391 references, a 10-page paper by the Commentor, and a professional services brochure. We found no explanation of how the Commentor thought the information presented in these sections was related to the project or how it may have affected the analysis. No comments were identified from these pages.

Commentor 21 (also signed by Commentors 22 and 23)

This letter contained 172 pages of comment. Many useful comments on our analysis were gleaned from these pages. However, much of the text was background information or supporting documentation for the basic comment being made. The background information and supporting documentation was not reproduced in the comments and response section. As was done with all letters, similar comments were grouped into one comment for analysis, some comments were not related to the decision being made, and some comments were opinions. The later two classes of comments from all letters will not appear in this appendix with a response.

The first five pages of the letter consisted of the cover letter, table of contents and title page. Pages 6 through 15 dealt with the issue of whether the project is a significant amendment. We basically disagree with the commentor that this is a significant decision according to NFMA, and the analysis that supports our decision is presented in the Final EIS in Chapter 1 Section "Relationship to other Laws and Regulations and also in the Record of Decision.

Pages 15 through 27 discuss expanding the scope of the project to include the Regional Forester Sensitive Species. A significant amount of the discussion is related to the Forest Service Manual direction related to Sensitive Species and summaries of surveys and reports related to specific sensitive species. Our rationale for defining the scope of this project is presented in the FEIS Chapter 1 section "Relationship to other Laws and Regulations" under the NEPA subsection. In summary, we believe the expansion of analysis to cover the sensitive species is premature. Conservation assessments and strategies have not yet been prepared for these species. In the meantime, the T&E Amendment BA (Appendix D) addressed impacts to these species from the alternatives considered and for the preferred alternative made a no adverse impact determination.

Pages 27 through 35 discuss a variety of items including: new information, unrealistic public comment period, premature scoping, relation to NEPA analysis of site-specific projects, spraying herbicides, and integrating programmatic Management of our National Forests. Generally, a discussion of how we addressed these subjects was developed in the DEIS and expanded or clarified in the FEIS in Chapter 1 – Purpose and Need.

Pages 35 through 44 discuss expanding the number of alternatives considered in detail. The Commentor provides examples of 72 alternatives that should be considered. These alternatives vary based on the following criteria: logging levels, seasonal restrictions on cutting, uneven aged and even aged management, special protection areas, watershed improvement, reforestation projects, Landscape Corridor concept, herbicide use, MIS species, Roads to trails, and Quantifiable Management Goals and Objectives. The alternatives considered but eliminated from detailed study section was expanded from two to five and responses to other alternative comments were provided in Appendix F.

Pages 45 through 47 cover shorter discussions on inadequacy of the DEIS, recommendations for the Northern long-eared bat, and the Small Whorled Pogonia. Pages 48 through 66 provide comments and discussions primarily dealing with the Desired Future Condition of the Forest Plan and other projects such as East Side and Duck-Sheriff EIS's, as well as 15 other timber sale projects. Several comments were identified where the discussion specifically related the information to the T&E Amendment; otherwise the information was not related to the scope of the decision at hand.

Pages 66 through 76 deal with a variety of subjects including: public opinions, fragmentation, herbicides, and economics. From this, we identified several comments that were evaluated and responded to as appropriate.

Pages 76 through 79 dealt with NEPA and the Supplemental EA approach for current timber sale projects; therefore, no comments were identified from this section that related to the T&E Amendment.

Beginning on page 80 and through page 86 was a discussion on NFMA, which included some comments similar to those on pages 35 through 44 addressing uneven aged alternative, zero cut alternatives and inclusion of PETS species in the project scope. Most of the discussion, however, was not within the scope of this EIS as it was related to the approach and consistency of the Forest Plan with the current timber sale projects. Several comments appeared to be specific to the T&E Amendment that were identified and evaluated.

Pages 86 through 161 contained discussions on a variety of sensitive species, as well as the Federally threatened and endangered species. Where information was related to the T&E Amendment, comments were identified for analysis that summarized the concerns. Again, approximately half of this lengthy

discussion was informational and was not within the scope of the analysis for the five Federally listed threatened and endangered species.

The remainder of the document, from page 161 to page 172, contained a summary of concerns and recommendations from which we identified several comments. Many of these comments were repeating subjects discussed and identified previously.

FOREST SERVICE RESPONSE

Changes were made throughout the DEIS to produce the final document. Many sections were rewritten and enhanced for clarification. Two new issues were identified that resulted in three additional alternatives being considered but eliminated from detailed study. A new standard and guideline was added and two were dropped based on comments from the FWS and others. Many corrections, clarifications and additions were made to the standards and guidelines, the alternatives, the effects, the Amendment BA, and the ANF CP (including developing and appending the Zebra Mussel Action Plan). These changes improved the quality of the document and the decision.

Table 1 displays the resulting 188 substantive comments along with the Forest Service response. Comments not related to the decision being made and comments that were opinions or statements are not included. An index of commentors is given in Table 2.

Comments have been grouped into the following categories.

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TABLE 1. RESPONSE TO COMMENTS

ECOLOGICAL PROCESSES

Commentor(s)	12
Comment 1	137. (page 15) Where have you addressed the "self thinning rule of ecology"?
Response	The EIS addresses how the Forest Plan S&G's should be changed to ensure or enhance the survival of T&E species on the ANF as outlined in the BO (pp. 69-80). Only those elements of the environment that are affected by the proposed changes in S&G's are addressed in this analysis. The "self thinning rule of ecology" is not being affected.
Commentor(s)	12
Comment 2	221. You have not addressed "fungi diversity". 222. Does not the Forest Plan address fungi diversity?
Response	The EIS addresses how the Forest Plan S&G's should be changed to ensure or enhance the survival of T&E species on the ANF as outlined in the BO(pp. 69-80). Only those elements of the environment that are affected by the changes are addressed in this analysis and fungi diversity was not significantly affected.
Commentor(s)	12
Comment 3	141. (Table 6) Nothing regarding system health is mentioned here. Is not system health a mandated concern? Or is tree biology and system health not a part of the Forest Plan (your definition)?
Response	The Forest Plan does address system health in general, as it addresses the relationships between various elements of the ecosystem and how these functioning systems may be impacted by forest management activities. Furthermore, the T&E BA (12/98), and BO (6/99) analyze the potential impacts of forest management activities to T&E species as well as the relationships between these species and their forest environment; for example, the T&E BA (12/98) addresses the potential impacts of insecticides to the food supply of bats (p. 34-35).
Commentor(s)	21, 22, 23
Comment 4	1. Many of the PETS species to be affected by proposed Amendment are sensitive to fragmentation. From the endangered Indiana Bat to the sensitive (and state threatened) Yellow-bellied flycatcher (<i>Empidonax flaviventris</i>) the PETS species require or at least prefer substantial amounts of unfragmented forests. The Draft EIS needs to consider the effects of fragmentation on these species.
Response	The DEIS analyzed the impacts of implementing new standards and guidelines for T&E species provided in the BO. Impacts of timber harvesting, road building, and other forest management activities are analyzed in the T&E BA (12/98) and BO. The Draft Indiana Bat Recovery Plan has been developed by the top Indiana bat experts in the Nation and represents the consensus of these experts on the biology and habitat of the Indiana bat. Fragmentation is addressed in the Draft Recovery Plan. Specifically it states: "Indiana bats live in highly altered landscapes and use an ephemeral resource (dead and dying trees) as roost sites. Anecdotal evidence suggests that the Indiana bat may, in fact, respond positively to habitat disturbance." Conceptually, at least in the western part of the species' range, the Indiana bat may have been a savanna species. The following facts support this contention: Indiana bats prefer large trees in the open or at edges, they seem to prefer open canopies and fragmented forest landscapes..." (p. 9). The Forest Service relies heavily on the experts on the Recovery Team to provide the best scientific information and recommendations possible for conservation and recovery of the species.
	The T&E BA (12/98) and the BO analyze the impacts of forest activities on T&E species, including the effects on potential habitat. Potential impacts to sensitive species are addressed in the Biological Assessment

(Appendix D pp. 18-22) of this DEIS. Yellow-bellied flycatchers are currently nesting in the early successional habitat created by the 1985 tornado, a habitat much different than a fragmented agricultural landscape

Commentor(s)	21, 22, 23
Comment 5	The Forest Service had ignored the BO and all of the scientific literature. The Indiana bat is significantly harmed by fragmentation. The literature supports this. Consider these comments on the Indiana Bat Draft Recovery Plan submitted by Scott Pruitt, the Acting Field Supervisor of USFWS in Bloomington, Indiana: (See letter #58, p. 125-126 for cited text).
Response	<p>We have thoroughly reviewed and considered the BO and relevant scientific information. The purpose of this analysis is to: 1) identify how new information and requirements pertaining to the four T&E species contained within the USDI Fish and Wildlife Service Biological Opinion, and the five species contained within the Conservation Program for T&E Species on the Allegheny National Forest affects the implementation of the Forest Plan; and 2) identify what changes are needed in current Forest Plan S&G's and monitoring requirements. Fragmentation is not part of the purpose and need. The BO clearly states that continued implementation of the Forest Plan "as is" will not jeopardize the continued existence of the Indiana bat (p. 61). The DEIS analyzed the impacts of implementing new standards and guidelines for T&E species provided in the BO. Impacts of timber harvesting, road building, and other forest management activities that cause fragmentation are analyzed in the T&E BA (12/98) and BO.</p> <p>The commenter has misinterpreted Pruitt's statement on fragmentation. Pruitt refers to the agricultural landscape surrounding the Jefferson Proving Ground as fragmented. The ANF is not considered an agricultural landscape and early successional forested habitats should not be compared with agricultural fields when analyzing fragmentation because wildlife use is much different.</p>

PHYSICAL ENVIRONMENT

Commentor(s)	21, 22, 23
Comment 6	The Forest Service should establish Goals and Objectives for the purchase of these [OGM] rights. Once Goals and Objectives are established in the Plan the Forest Service can pursue funding to meet these requirements. ... We recommend that the following Goals be established and incorporated into the Forest Plan for subsurface procurements: [in table format] Current Subsurface Ownership (in acres) ~31,000; Goal by 2003 Forest Plan Revision (in acres) 50,000; Goal by 2010 Short-term (in acres) 100,000; Goal by 2020 Mid-term (in acres) 200,000; Goal by 2050 Long-term (in acres) 513,000
Response	<p>Changing the Forest Plan Goals and Objectives for acquisition of subsurface mineral rights is not part of the purpose and need. The recommendation suggested here could be considered in the Forest Plan revision, scheduled in 2002/3.</p> <p>This EIS addresses how proposed changes to Forest Plan S&G's impact resource elements and outputs considered in the Plan. Only those elements of the environment that are affected by the changes are addressed in this analysis. The purpose of this analysis is to: 1) identify how new information and requirements pertaining to the four T&E species contained within the USDI Fish and Wildlife Service Biological Opinion, and the five species contained within the Conservation Program for T&E Species on the Allegheny National Forest affects the implementation of the Forest Plan; and 2) identify what changes are needed in current Forest Plan S&G's and monitoring requirements.</p>
Commentor(s)	12
Comment 7	22. (per page ii par. 8) Do not CWD play key roles in stream and water ecology? 42. (per page vi par. 4) "Aquatic Resources" I see that CWD are not mentioned which have great ecological benefit for streams and watersheds which at the time this was a fertile forest (my definition) were present in large amounts before clear cutting and extract.
Response	Coarse Woody Debris (CWD) is not an issue in this analysis, however, CWD has been addressed in the Forest Plan (See pages 4-19a, paragraph 1, of the Forest Plan).

PLANNING PROCESS

Commentor(s)	13
Comment 8	The Forest Service lacks: FSM 2672.1, explicitly states that the Service will ensure the viability of sensitive species. This indicates the burden of proof lies with the Forest Service and not appellants or litigants to demonstrate the viability of all sensitive species occurring on the forest. E. motivation to work with individuals, such as myself, who are concerned about sensitive species and their habitats, to conduct species and habitat surveys, develop monitoring protocols and management objectives, and other management tools to protect these species. FSM 2670.45(5), explicitly directs the Forest Supervisor to work with groups and individuals concerned with the conservation of threatened, endangered, proposed, and sensitive species.
Response	The Forest Service has been working with other agencies and individuals since the development of the Forest Plan in 1985. See pages 81, 82 of the BA and Appendix A of the EIS, which lists nineteen consultants. T&E species surveys completed in cooperation with other agencies are listed in the literature cited in the BA (12/98) (pp. 83-86).
Commentor(s)	21, 22, 23
Comment 9	The issue that is never discussed in the Draft EIS for Threatened and Endangered Species Management on the Allegheny is what the actual effects of implementing the goals and objectives within the Forest plan would be.
Response	The effects on T&E species of implementing the goals and objectives and desired future condition in the Forest Plan were analyzed in the T&E BA (12/98) pages 28-41, 48-61, 66-70, 74-75. They are also analyzed by the USFWS in their BO. The conclusion reached is that the analysis suggests, "that there will be an abundance of suitable roost trees for bats on the ANF and that the impacts of the incidental take...will be reduced" (BO, p. 68). The USFWS believes that "potential impacts to the species have been sufficiently minimized to prevent a significant cumulative reduction in population numbers of the Indiana bat" (BO, p. 61). Implementation of the Forest Plan is not likely to jeopardize the continued existence of the Indiana bat (BO, p. 61).
Commentor(s)	21, 22, 23
Comment 10	For starters, the Objectives in the Forest plan call for far higher levels of cutting, road work, herbicide application and so forth than the BO does.
Response	Program levels contained within the Forest Plan represent the upper limit of production that would be allowable under the Plan. We used levels in the T&E BA (12/98) and BO that reflect more realistic program levels over the short-term.
Commentor(s)	21, 22, 23
Comment 11	The Forest Service has also refused to incorporate changes to the Plan to compensate for extensive amounts of new information regarding Sensitive species.
Response	An alternative that proposes changes to the Forest Plan that addresses needs of sensitive species was considered but eliminated from detailed study (EIS p. 36) Conservation Plans that would outline possible Forest Plan changes have not yet been completed, therefore this comment is premature. Any changes to the Forest Plan that might be needed to address the needs of sensitive species would be considered at a future date. Data gathering and analysis for sensitive species has been and will continue into the future as budgets allow. However, at this time the information is not adequate forest wide or the data available has not been analyzed sufficiently to complete conservation plans. When adequate information and analysis has been

completed and there is a demonstrated need to amend the Forest Plan it will be considered separately in another NEPA document.

In the meantime, the impacts of Forest Service actions on sensitive species will be analyzed in each and every NEPA document such as it was in this analysis. See Chapter 4 (pp. 72-96) and Appendix D (pp. 18-22), where the effects of this proposal on the sensitive species is analyzed.

We do not believe this is a connected action as defined in 40 CFR 1508.25 (1) as it does not trigger other actions before during or after the proposed action nor is it an interdependent part of a larger action and depend on that larger action for its justification.

Since similar proposals (through development of conservation strategies) for sensitive species are unknown at this time cumulative effects are also unknown and so cannot be discussed in the same EIS. The timing for analyzing Forest Plan amendment actions for sensitive species along with proposed actions for the T&E species is not appropriate. However, the effects of this proposal on each sensitive species have been completed as described above to ensure their viability into the future.

Commentor(s)	21, 22, 23
Comment 12	...Forest Service is refusing to accommodate many of the mandatory terms and conditions outlined in the Biological Opinion for the Northern riffleshell and Clubshell mussels.
Response	All the Terms and Conditions outlined in the BO have been incorporated into the Plan Amendment or are already met with existing Forest Plan direction. For example, the water quality S&G's, as related to buffer strips, have been rewritten to bring them in line with the State BMP's. See Appendix B (pp. 3-20) for a comparison of the Terms and Conditions in the BO and their disposition.
Commentor(s)	60
Comment 13	The biological opinion did not indicate that "T&E species' needs are not compromised by continued implementation of the Forest Plan" (DEIS, p. 27, 28). Rather, it determined that while implementation of the Forest Plan could result in the take of federally listed species, this take was not sufficient to constitute jeopardy to them (with the exception of the northern riffleshell and boating facility operation).
Response	We have corrected the statements made in the DEIS on pages 27 and 28.
Commentor(s)	21, 22, 23
Comment 14	Unbelievably, the Desired Future Condition (hereinafter, "DFC") as declared in the Forest Plan is a forest that is dominated (>53% of the area) by even-aged stands of less than 50 years of age! This shift in age-classes would result in major impacts to wildlife such as the endangered Indiana bat. Nevertheless, the Draft Environmental Impact Statement (EIS) for Threatened and Endangered Species on the Allegheny includes no discussion of the possible effects of pursuing the DFC.
Response	The effects on T&E species of implementing the goals and objectives and desired future condition in the Forest Plan were analyzed in the T&E BA (12/98) pages 28-41, 48-61, 66-70, 74-75. The T&E BA (12/98) addresses program levels that are anticipated to occur over the next several years. The BO considers these program levels and includes an incidental take statement that covers this same time period. The BO anticipates the need for Forest Plan revision, at which time broader planning issues, alternatives, and effects on T&E species will be considered.
Commentor(s)	12
Comment 15	Some of My Terms: I request my terms be considered a part of my response to the proposed Draft Environmental Impact Statement for Threatened and Endangered Species on the Allegheny National Forest and placed with my statements and questions in this project.
Response	We will keep your terms and their definitions on file. The terms used in the T&E Amendment EIS are normally accepted terms used by the scientific community as well as the general public. See the Chapter 8 -

Glossary for the definition of many of the key words used as well as references to definition sources for the more common terms.

Commentor(s)	12, 21, 22, 23
Comment 16	Many words used in the DEIS need definitions.
Response	See Chapter 8 - Glossary for definitions of many of the key words used in the T&E Amendment EIS. Other sources for definitions of common terms include; The Dictionary of Forestry, John H. Helms, Ed. The Society of American Foresters, 1998, 210 pp., and a standard dictionary such as the New Webster's Dictionary and Thesaurus of the English Language, Lexicon Publications, Inc., 1993.

PURPOSE AND NEED

Commentor(s)	12
Comment 16	Many words used in the DEIS need definitions.
Response	See Chapter 8 - Glossary for definitions of many of the key words used in the T&E Amendment EIS. Other sources for definitions of common terms include; The Dictionary of Forestry, John H. Helms, Ed. The Society of American Foresters, 1998, 210 pp., and a standard dictionary such as the New Webster's Dictionary and Thesaurus of the English Language, Lexicon Publications, Inc., 1993.
Commentor(s)	21, 22, 23
Comment 18	This is not questioning the validity of the Forest Plan or if Logging is good or bad, it is just asking the question if what you are suggesting here and the amount of disturbance you are planning to allow is legal and in the interest of T&E Species as well as the rest of the system.
Response	The BO concluded that continued implementation of the Forest Plan, at the levels of activities analyzed in the BO and with the addition of the amendment S&G's, would not likely jeopardize the continued existence of T&E species on the ANF (p.61). Program levels for various management activities are listed in the incidental take statement (pp. 65-68).
Commentor(s)	21, 22, 23
Comment 18	The Proposed Action however does not include the activities included within the ANF Conservation Program. In fact, the Forest Service explicitly excludes the major aspects of the ANF Conservation program if they are not considered consistent with current Forest Plan Management: "Items included in the BO and the ANF Conservation Program which are consistent with existing Forest Plan direction and implemented through administrative action or under existing program management would be adopted. (p. 19)" But the issue of the "ANF Conservation Program" is even worse than it first appears. The Forest Service apparently considers the "ANF Conservation Program" a completed document that they can implement at will. This is clear based solely on the fact that the Forest Service used this "Program" to develop the Proposed Action: "The proposed action was developed by examining the BO, the ANF Conservation Program, and scoping comments to determine which items would be most appropriately addressed by amending the Forest Plan (p. 18)."
Response	Section 7(a)(1) and 7(a)(2) of the ESA require that National Forests develop programs for the conservation of T&E species, and that consultation between agencies take place to ensure that activities do not result in jeopardy to T&E species of concern. ESA does not require that this process be incorporated into a Forest Plan. The Conservation Program prepared by the ANF is a stand-alone document that responds directly to Section 7(a)(1) and 7(a)(2). There are no requirements in either NEPA or NFMA to include the Conservation Program in the Forest Plan. However, certain elements of the Conservation Program and Biological Opinion should be incorporated in the Forest Plan. These documents serve as the reason to develop a proposed action for amendment to the Forest Plan. Our review of the Conservation Program and the BO indicates that each are able to be implemented within the current management objectives of the Forest Plan and would not be in violation of existing standards and guidelines. This is because the existing standards and guidelines set rules that are more lenient than what is required by the Conservation Program and BO. We have the latitude to implement stricter standards without amending the Forest Plan. We do feel that the Plan should be amended to reflect these tighter standards and have developed a proposed action that reflects these changes. By including the Conservation Program in Appendix A of the DEIS, the public has an opportunity to review and comment on it.

Commentor(s)	21, 22, 23
Comment 19	Given the fact that the Forest Service has not previously given such close attention to most of the species at issue here there has not been a serious attempt to identify quantifiable objectives for the Indiana bat, Northern riffleshell mussel, the Clubshell mussel, the Bald eagle, and the Small whorled pogonia. That should be a priority of this Draft EIS. But it isn't. Quantifiable objectives are not determined.
Response	Our objective for threatened and endangered species has not changed. Page 4-37 of the Forest Plan states that the ANF "will carry out National Forest responsibilities in Recovery Plans for threatened and endangered species." Page 4-35 emphasizes the need to insure that viable populations of native species are maintained. The Conservation Program (Appendix A pp. 1-2) has been revised to more clearly state the objectives and their tie to the Recovery Plans for each species.
Commentor(s)	21, 22, 23
Comment 20	1. According to independent surveys non-timber uses such as Recreation (57%), Peace of Mind (73%), Scenic Beauty (74%), Wildlife Habitat (82%), Soil Protection (85%), Clean Water (96%), and Clean Air (96%) were characterized by the general public as "very important" more often (percentages in parenthesis above) than timber (only 27%) (Jones 1993). Accordingly these (sic) uses should receive priority in the Amendment and Draft EIS.
Response	The effects on most of these resource areas were addressed during the analysis, either in the T&E BA (12/98), the BO, or the EIS (pp. 72-96).
Commentor(s)	21, 22, 23
Comment 21	When did the Forest Service narrow the scope of this analysis to exclude the Small whorled pogonia? The Notice of Intent specifically states, "Species to be considered include the ... small whorled pogonia." The Forest Service has adopted new surveying guidelines that should be reflected in the proposed action.
Response	The analysis in the T&E BA (12/98) is based on the scientific literature, objectives, and recommendations in the Recovery Plans for each of the 5 species to meet consultation requirements under ESA section 7(a)(2). In response to the T&E BA (12/98) the FWS determined that Forest plan implementation is not likely to adversely affect the small whorled pogonia (FWS letter 12/21/98).
Commentor(s)	21, 22, 23
Comment 22	FSM 2670.45(2) requires Forest Supervisors to develop quantifiable recovery objectives for threatened and endangered species. Allowing for the "continued existence" does not constitute a recovery objective; rather, it is a status-quo objective.
Response	The analysis in the T&E BA (12/98) is based on the scientific literature, objectives, and recommendations in the Recovery Plans for each of the 5 species to meet consultation requirements under ESA section 7(a)(2). The Conservation Program (Appendix A pp 1-2) has been revised to more clearly reflect the specific role that the ANF plays in obtaining Recovery Plan objectives to meet ESA Section 7(a)(1).
Commentor(s)	21, 22, 23
Comment 23	The Notice published in the Federal Register on February 8 1999 states "The purpose is to...ensure the continued existence" of threatened and endangered species. There is no mention of recovery anywhere in the document.
Response	The analysis in the T&E BA (12/98) is based on the scientific literature, objectives, and recommendations in the Recovery Plans for each of the 5 species to meet consultation requirements under ESA section 7(a)(2) . The Conservation Program (Appendix A pp. 1-2) has been revised to more clearly reflect the specific role that the ANF plays in obtaining Recovery Plan objectives to meet ESA Section 7(a)(1).

Commentor(s)	37
Comment 24	Expanded scope of EIS to protect endangered species- ending or reducing sediment release into streams.
Response	Existing Forest Plan S&G's were examined during the T&E BA (12/98) and BO process. This examination showed that one existing Forest Plan S&G should be modified to be consistent with BMP's as defined by the State of Pennsylvania (EIS p. 24). Additional analysis for sediment reductions is not part of the purpose and need which is to: 1) identify how new information and requirements pertaining to the four T&E species contained within the USDI Fish and Wildlife Service Biological Opinion, and the five species contained within the Conservation Program for T&E Species on the Allegheny National Forest affects the implementation of the Forest Plan; and 2) identify what changes are needed in current Forest Plan S&G's and monitoring requirements.
Commentor(s)	60
Comment 25	As under section 7(a)(2) of the Endangered Species Act, Federal agencies are to consult with the Fish and Wildlife Service (FWS) regarding actions they propose to carry out in fulfillment of their section 7(a)(1) responsibilities. The DEIS fails to acknowledge this requirement (p. 3, p. A-1).
Response	We added the consultation requirement to chapter 1, page 3 and A-1 of the DEIS.
Commentor(s)	60
Comment 26	The zebra mussel action plan and the effects of its implementation should also be included in the DEIS.
Response	The Zebra Mussel Action Plan is included in Appendix A. The effects of implementing it are discussed in Chapter 4 (pp. 72-96).
Commentor(s)	21, 22, 23
Comment 27	Needed changes for sensitive species constitute connected, cumulative and similar actions as defined in 40 CFR 1508.25 and should be considered within the same EIS.
Response	<p>An alternative that proposes changes to the Forest Plan that addresses needs of sensitive species was considered but eliminated from detailed study (Chapter 2 p. 36) Conservation Strategies that would outline possible Forest Plan changes have not yet been completed, therefore this comment is premature. Any changes to the Forest Plan that might be needed to address the needs of sensitive species would be considered at a future date.</p> <p>Data gathering and analysis for sensitive species has been and will continue into the future as budgets allow. However, at this time the information is not adequate forestwide or the data available has not be analyzed sufficiently to complete conservation plans. When adequate information and analysis has been completed and there is a demonstrated need to amend the Forest Plan it will be considered separately in another NEPA document.</p> <p>In the meantime, the impacts of Forest Service actions on sensitive species will be analyzed in each and every NEPA document such as it was in this analysis. See Chapter 4 (p. 93) and Appendix D (pp. 18-22) where the effects of this proposal on the sensitive species are analyzed.</p> <p>We do not believe this is a connected action as defined in 40 CFR 1508.25 (1) as it does not trigger other actions before during or after the proposed action nor is it an interdependent part of a larger action and depend on that larger action for its justification.</p> <p>Since similar proposals (through development of conservation stategies) for sensitive species are unknown at this time cumulative effects are also unknown and so cannot be discussed in the same EIS. The timing for analyzing Forest Plan amendment actions for sensitive species along with proposed actions for the T&E species is not appropriate. However, the effects of this proposal on each sensitive species have been completed as described above to ensure their viability species into the future (Appendix D pp. 18-22).</p>

Commentor(s)	17, 18, 19, 20, 21, 22, 23, 24, 25, 30, 31, 33, 34, 35, 36, 38, 39, 41, 42, 44, 54, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76
Comment 28	The FEIS needs to consider 17 species recently listed as Federally sensitive and the effects of management on these species.
Response	<p>An alternative that proposes changes to the Forest Plan that addresses needs of sensitive species was considered but eliminated from detailed study (EIS Chapter 2 p. 36) Conservation Plans that would outline possible Forest Plan changes have not yet been completed, therefore this comment is premature. Any changes to the Forest Plan that might be needed to address the needs of sensitive species would be considered at a future date.</p> <p>Data gathering and analysis for sensitive species has been and will continue into the future as budgets allow. However, at this time the information is not adequate forest wide or the data available has not be analyzed sufficiently to complete conservation plans. When adequate information and analysis has been completed and there is a demonstrated need to amend the Forest Plan it will be considered separately in another NEPA document.</p> <p>In the meantime, the impacts of Forest Service actions on sensitive species will be analyzed in each and every NEPA document such as it was in this analysis. See Chapter 4 (p. 93) and Appendix D (pp. 18-22) where the effects of this proposal on the sensitive species are analyzed.</p> <p>We do not believe this is a connected action as defined in 40 CFR 1508.25 (1) as it does not trigger other actions before during or after the proposed action nor is it an interdependent part of a larger action and depend on that larger action for its justification.</p> <p>Since similar proposals (through development of conservation strategies) for sensitive species are unknown at this time cumulative effects are also unknown and so cannot be discussed in the same EIS.</p> <p>The timing for analyzing Forest Plan amendment actions for sensitive species along with proposed actions for the T&E species is not appropriate. However, the effects of this proposal on each sensitive species has been completed as described above to ensure their viability into the future (EIS Appendix D pp. 18-22).</p>
Commentor(s)	20, 21, 22, 23, 24, 30
Comment 29	The ANF Conservation Program must be incorporated into the Forest Plan and the DEIS. All BO Terms and Conditions should be included in the proposed action.
Response	<p>Section 7(a)(1) and 7(a)(2) of the ESA require that National Forests develop programs for the conservation of T&E species, and that consultation between agencies take place to ensure that activities do not result in jeopardy to T&E species of concern. ESA does not require that this process be incorporated into a Forest Plan. The Conservation Program prepared by the ANF is a stand-alone document that responds directly to Section 7(a)(1) and 7(a)(2). There are no requirements in either NEPA or NFMA to include the Conservation Program in the Forest Plan. However, certain elements of the Conservation Program and BO should be incorporated in the Forest Plan. These documents serve as the reason to develop a proposed action for amendment to the Forest Plan. Our review of the Conservation Program and the BO indicate that each are able to be implemented within the current management objectives of the Forest Plan and would not be in violation of existing standards and guidelines. This is because the existing standards and guidelines set rules that are more lenient than what is required by the Conservation Program and BO. We have the latitude to implement stricter standards without amending the Forest Plan. We do feel that the Plan should be amended to reflect these tighter standards and have developed a proposed action that reflects these changes. By including the Conservation Program in Appendix A of the DEIS the public has an opportunity to review and comment on it. All Terms and Conditions of the BO have been incorporated into the S&G's or the Conservation Program (Chapter 2 pp. 29-33 and Appendix A p. 3-12).</p>

ALTERNATIVES

Commentor(s)	13
Comment 30	<p>6. To be consistent with federal law and Forest Service policy, this analysis must make the recovery of threatened and endangered species the top priority of ongoing management activities on the Allegheny National Forest.</p> <p>According to FSM Chapter 2670.31(1), the Forest Service is required to "Place top priority on conservation and recovery of endangered, threatened, and proposed species and their habitats through relevant National Forest System..."</p> <p>The current EIS does not place top priority on the conservation and recovery of endangered, threatened, and proposed species or their habitats. There was no alternative that analyzed this outcome in detail.</p>
Response	<p>The ANF is processing this Forest Plan amendment because conserving T&E species is a top priority. Through the years, within budget constraints, we have worked with other interested parties including the FWS to gather data and information related to these species. See the T&E BA (12/98) Appendix A - Consultation (FWS) History, and T&E BA (12/98) pages 81-86 that displays over 19 consultants and literature cited including surveys and research done on the ANF for T&E species since the Forest Plan was approved in 1986. We have also developed a Conservation Program (Appendix A, DEIS) to indicate to the public what specific efforts will be made to conserve T&E species.</p>
Commentor(s)	21, 22, 23
Comment 31	The Forest Service responded by refusing to actually consider any other alternatives besides the proposed action. In fact, the only alternative (besides the Proposed Action) considered by the Forest Service was an alternative developed by U. S. Fish and Wildlife Service (hereinafter, "USFWS") solely for the purposes of avoiding a Jeopardy situation for the Northern riffleshell mussel rangewide.
Response	<p>Alternatives were developed based on issues raised during scoping that respond to the purpose and need. This process is outlined in Chapter 2 of the EIS (pp 34-35).</p>
Commentor(s)	21, 22, 23
Comment 32	The Draft EIS includes no alternatives that would reflect Objectives consistent with the Biological Opinion and its associated Incidental Take.
Response	<p>Program levels contained within the Forest Plan represent the upper limit of production that would be allowable under the Plan. We used levels in the T&E BA (12/98)(pp. 4 and 28) and BO that reflect more realistic program levels over the short-term. If the level of activities exceeds the level of Incidental Take, new consultation with the FWS will be initiated.</p>
Commentor(s)	21, 22, 23
Comment 33	9. Glyphosate and Oust have broad applications and cause mortality in a wide range of plant species. The result is that all PETS plant species, including the Small whorled pogonia, are likely to be harmed by the application of these herbicides. The Forest Service should consider a no herbicide alternative within the Draft EIS.
Response	<p>At the time the ANF Understory Vegetative Management (UVM) FEIS was prepared, both glyphosate and sulfometuron methyl were known to be broad spectrum herbicides (ANF, 1991; pp. 2-6 and 2-7) that potentially could affect a wide variety of plant species. Analysis documented in this EIS considers those potential effects. Mitigation measures (buffers or no treatment zones) are designed to protect small whorled pogonia and other unique plant communities (USDA-FS 1991, Ch 5, p. 2), including sensitive species. No adverse impacts are anticipated (Appendix D, Plan Amendment EIS).</p> <p>The BO for this threatened and endangered species amendment indicates Bald eagles, Indiana bats, and Clubshell/Northern riffleshell are not likely to be affected due to low toxicity from and low exposures to herbicides (US F&WS 1999, pp. 10, 11, and 51). This is consistent with the wildlife risk assessment</p>

completed for the ANF UVM EIS that concluded there would be no significant risk to any terrestrial wildlife species from the proposed herbicide use (USDA-FS 1991, Appendix C, p. 1), nor would there be any effects on any threatened or endangered species (USDA-FS 1991, Chapter 4, p. 12).

Analysis documented in the Forest Plan FEIS (Ch 4, p. 38, Appendix C, pp. 42-44) looked at the effects from implementing an alternative where herbicides are not used, as did the ANF UVM EIS (USDA-FS 1991, Chapter 2, p. 5). You have not provided new information that has not already been considered in these analyses. There is no indication that there is a need to reconsider a no herbicide use alternative in this EIS.

Commentor(s)	21, 22, 23
Comment 34	Terms and Conditions within the Biological Opinion are not supposed to be the only driving force when developing the alternatives.
Response	We considered public comments received during scoping, management concerns and the BO in the development of issues used to generate alternatives (Chapter 2 pp. 34-35). Alternatives that were developed reflect the purpose and need for the EIS.
Commentor(s)	21, 22, 23
Comment 35	At minimum, the inclusion of all of the Terms and Conditions as its own alternative should have been considered within the EIS.
Response	There are Terms and Conditions that do not fit within the decision parameters of a Forest Plan, although they can be implemented through administrative procedures. Alternatives 1 and 2 includes all the Terms and Conditions relevant to Forest Plan decisions. See Appendix B
Commentor(s)	21, 22, 23
Comment 36	...the Forest Service has not considered an alternative that modifies existing Forest Plan direction and therefore that would improve water quality (only alternatives that mitigate against proposed negative impacts).
Response	FWS concerns related to water quality centered on the need for Forest Plan S&G's to meet or exceed the BMP's. A comparison of State BMP's and Forest Plan S&G's showed that one S&G should be revised and is included as S&G 15 in Alternatives 1 and 2 (EIS p.24). Terms and conditions in the BO also outlined water quality monitoring needs - which are already implemented; road and trail inventories - which have already been completed. Alternatives 1 and 2 also amend the Forest Plan Monitoring Plan to include monitoring for Northern riffleshell mussel and Clubshell mussel (EIS p. 40).
Commentor(s)	21, 22, 23
Comment 37	The Forest Service, however concludes that, beyond the Terms and Conditions, no changes are necessary because "Specific standards and guidelines are not defined in this section." The Reasonable and Prudent Measure is very clear that the Forest Service shall incorporate measures that "are not limited to" the terms and conditions of the Biological Opinion. The Forest Service gives no further explanation for not developing Alternatives that ensure that proposed management activities comply with this Reasonable and Prudent Measure. Such alternatives could include, for example, the establishment of watersheds important to the mussels as Special Management Zones where timber cutting and road construction are limited or not permissible.
Response	The Conservation Program (Appendix A) incorporates the terms and conditions in the BO as well as pertinent actions in the Recovery Plans. Many of the measures to conserve T&E species go beyond those required in the BO. The BO includes 42 terms and conditions. All of these are included in the Conservation Program plus additional measures from the Recovery Plans and from local situations. The EIS incorporates 15 of the Terms and Conditions as new or revised S&G's in the Forest Plan. All additional measures suggested by the public during scoping have been considered. Your suggestion of special management zones for watersheds where mussels are known to exist was considered. However, our conclusion is that Forest Service activities are not creating sediment problems, with the implementation of S&G's in the Forest Plan. We are continuing to monitor sediment (BO, pp. 76 and 77) to determine if corrective actions are necessary.

Commentor(s)	21, 22, 23
Comment 38	The statement that "potential impacts to the species have been sufficiently minimized" underscores the fact that impacts to the Indiana bat remain. The Forest Service's statement, however, that "T&E species' needs are not compromised" is inconsistent in that it implies that those impacts do not remain. Nor did the USFWS draw no impact conclusions in regards to the Bald eagle, the Northern riffleshell mussel, or the Clubshell mussel. In fact, the Service found that continued implementation would jeopardize the entire existence of the Northern riffleshell mussel! This is far from a no impact conclusion. Therefore, the Forest Service has falsely cited that Biological Opinion in its dismissal of the Zero-cut Alternative.
Response	We have rewritten the statements made in the DEIS on pages 27 and 28 to clearly reflect why that alternative is dismissed and the determinations made by the FWS concerning references to jeopardy and zero cut. Your interpretation of the statements is incorrect. The statement "T&E species needs are not compromised" does not mean that there would not be impacts, particularly the potential of "take" remains. Also, zero cut does not address the jeopardy statement with Northern riffleshell mussel, which is caused by continued operation of boat launches. We have not falsely cited the BO in the dismissal of the zero-cut alternative.
Commentor(s)	21, 22, 23
Comment 39	The Forest Service's statement that "There is nothing in this FWS BO to suggest that a zero-cut philosophy is warranted or even desirable to improve the survival and recovery of these T&E species" is patently false.
Response	We have rewritten the statements made in the DEIS on pages 27 and 28 for clarification.
Commentor(s)	21, 22, 23
Comment 40	The Range of alternatives should be changed to eliminate "salvage" cutting from all alternatives.
Response	Salvage cutting does remove dead trees. However, S&G's assure that an adequate number of dead trees are left standing to provide T & E habitat. See EIS Chapter 2 (pp. 30-32) and Appendix A (p. 6).
Commentor(s)	25
Comment 41	Your failure to complete a detailed analysis of a selection cutting alternative is a violation of the National Forest Management Act - this current EIS does not de-emphasize clear cutting.
Response	Chapter 2, "Alternatives Considered but Eliminated from Detailed Study, Alternative 5, Uneven-aged Emphasis" details considerations given selection cutting (EIS p. 36). The purpose of this analysis is to: 1) identify how new information and requirements pertaining to the four T&E species contained within the USDI Fish and Wildlife Service Biological Opinion, and the five species contained within the Conservation Program for T&E Species on the Allegheny National Forest affects the implementation of the Forest Plan; and 2) identify what changes are needed in current Forest Plan S&G's and monitoring requirements. A selection cutting alternative is not related to the purpose and need.
Commentor(s)	48
Comment 42	3) The DEIS prepares seem to take the position that: a) the presence of other boat launches not controlled by ANF increases the likelihood "that Zebra mussels could be introduced into the Allegheny River from other sources, including Conewango Creek (which drains Chautauqua Lake in New York) and from private, tribal and other agency boat launches on the Allegheny River boat launches in Pennsylvania," and b) therefore, the potentiality of other agencies' failure to address this issue somehow relieves ANF of its responsibility to budget for and to implement a rigorous exclusion program. Neither assumption is legally acceptable under the provisions of applicable law.
Response	Our wording in the DEIS does appear to put the burden of non-protection on other agency controlled boat launches. This was not our intention. The DEIS has been changed to accurately express the Forest Service position on this topic. See Chapter 4 (p. 93).

Commentor(s)	52
Comment 43	The EIS does not express protection to threatened species amply because even cutting method as the dreadful, awful, brutal clear cutting is not prohibited.
Response	The effects of even-aged harvest methods are discussed in the T&E BA (12/98) on pages 32- 33.
Commentor(s)	60
Comment 44	The DEIS should also evaluate the costs and benefits of compliance with RPA 1 by installing one or more decontamination facilities on the Forest at boating facilities.
Response	The Zebra Mussel Action Plan (which is an appendix to the ANF CP) is found in Appendix A of the FEIS. This plan includes the use of a portable wash station at ANF boating facilities.
Commentor(s)	60
Comment 45	In addition, the Forest Service's biological assessment, and the FWS's subsequent biological opinion, addressed only implementation of the existing Forest Plan (with its emphasis on even-age timber management). Neither document evaluated the potential positive or negative effects to federally listed species that may result from implementation of a zero cut or uneven-age management alternative.
Response	We acknowledge that neither the T&E BA (12/98) nor the June 1999 BO addressed the potential positive or negative effects to T&E species that may result from the implementation of a zero cut or uneven-age alternative. The purpose of formal consultation was to examine only the continued implementation of the existing Forest Plan. We have not proposed, nor do we plan to propose, a major change in the Forest Plan at this time. The need for a major change is not reflected in the T&E BA (12/98). These two alternatives were suggested during public scoping. They were analyzed in this DEIS, and a determination was made that detailed analysis was not warranted. The purpose of the statements made on pages 27-29 of the DEIS are to clarify why the development of alternatives that respond to zero-cut or uneven-aged management are not needed. These statements have been revised in the FEIS (See Chapter 2 pp. 35-36).
Commentor(s)	60
Comment 46	Commit to retaining the Forest Plan S&G's, and Conservation Program objectives and measures, for the bald eagle after the species is de-listed (i.e., no longer receives protection under the Endangered Species Act).
Response	We will continue to abide by all laws governing the management of wildlife on National Forests including the National Forest Management Act that requires us to maintain viable populations of native species that occur on National Forest land. Even after de-listing the standards and guidelines would be followed until the Forest Plan was amended or revised through a NEPA analysis.
Commentor(s)	62
Comment 47	The DEIS is inadequate because it eliminates from detailed consideration the Zero Cut and uneven-aged management alternatives. Both alternatives are reasonable and are necessary for a reasoned choice.
Response	The reasons for the elimination of Zero cut and uneven-aged management alternatives from detailed consideration were rewritten for clarification. See Chapter 2 Pp. 35-36).
Commentor(s)	62
Comment 48	The DEIS fails to identify the preferred alternative as required by NEPA.
Response	The Forest Service did not have a preferred alternative when the DEIS was issued. According to 40 CFR 1502.15 (e) identifying the preferred in the DEIS is not necessary, if one does not exist. Alternative 1 was identified as the proposed action.

Commentor(s)	63
Comment 49	(3) Why Alternative 3 CAN remain IN the discussion since it would not respond to the "...information and direction in the Biological Opinion...", and "...does not fully meet the Forest Service's obligations..." (page 4 of summary).
Response	If Alternative 3 were selected, the Forest Service would have to re-enter formal consultation with the USDI Fish and Wildlife Service.
Commentor(s)	17, 18, 19, 21, 22, 23, 26, 28, 33, 37, 44, 58, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76
Comment 50	The EIS does not provide a detailed analysis of uneven-aged timber management on endangered species.
Response	The effects of timber harvest activities are described in the T&E BA (12/98). The reasons for the elimination of an uneven-aged management alternative from detailed study are included in Chapter 2 (p. 36). It has been revised from the DEIS for clarity.
Commentor(s)	21, 22, 23, 42, 50, 58, 60, 62, 63
Comment 51	The EIS does not provide a detailed analysis of uneven-aged or no cutting on endangered species.
Response	The effects of timber harvest activities are described in the T&E BA (12/98). The reasons for the elimination of an uneven-aged management alternative and a no harvest alternative from detailed study are included in Chapter 2 (p. 36). It has been revised from the DEIS for clarity.
Commentor(s)	12
Comment 52	A zero cut option with restoration work is needed.
Response	The reasons for the elimination of a no harvest alternative from detailed study are included in Chapter 2 (p. 35). It has been revised from the DEIS for clarity.
Commentor(s)	21, 22, 23, 62
Comment 53	A broad range of alternatives is needed but not provided.
Response	A reasonable range of alternatives was developed to address the purpose and need of this EIS, which is to: 1) identify how new information and requirements pertaining to the four T&E species contained within the USDI Fish and Wildlife Service Biological Opinion, and the five species contained within the Conservation Program for T&E Species on the Allegheny National Forest affects the implementation of the Forest Plan; and 2) identify what changes are needed in current Forest Plan S&G's and monitoring requirements (See Chapter 2).

PLANNING CRITERIA AND EFFECTS

Commentor(s)	21, 22, 23
Comment 54	Indiana Bat. The Forest Service provides no rationale or factual basis that any of the nine management recommendations for protecting potential roosting/foraging habitat will promote the recovery of Indiana bats on the Allegheny National Forest. The retention of shagbark and shellbark hickories will likely benefit Indiana bats, but only if available roosting sites are a limiting factor. The significance of the remaining proposals is unknown. The lack of a Indiana bat survey and/or monitoring protocol is highly problematic, because without this data, it is impossible for the Forest Service to practice adaptive management. Additionally, there is no evidence that any proposed management of water sources will benefit bats.
Response	The nine management recommendations for protecting potential roosting/foraging habitat are terms and conditions from the BO. Rationale for these terms and conditions are provided in the BO. Surveys will be done using the latest Fish and Wildlife Service-approved survey protocol and will be conducted by qualified surveyors. Radio telemetry will be used to track any Indiana bats to identify and characterize roost trees and foraging habitat (BO p. 74, 5b&c).

Commentor(s)	21, 22, 23
Comment 55	Despite the significant differences between the effects considered within the Biological Opinion (a document not subject to NEPA procedural requirements) and the potential effects that the Plan carries, the Draft EIS makes no attempt to analyze the impacts that pursuing the existing Plan objectives would have on Threatened, Endangered, or Regionally Sensitive species.
Response	The effects on T&E species of implementing the goals and objectives and desired future condition in the Forest Plan were analyzed in the T&E BA (12/98) pages 28-41, 48-61, 66-70, 74-75.
Commentor(s)	21, 22, 23
Comment 56	The Department of Conservation and Natural Resources has said that the Small whorled pogonia is affected by habitat alterations and required mature forests. The implementation of the Forest plan direction would harm the Small whorled pogonia by destroying thousands of acres of potential habitat.
Response	More than 227,000 acres have been surveyed for small whorled pogonia and to date has not been found on the ANF. The Forest Service in consultation with the USF&WS, concluded that there is a remote chance that ANF activities could potentially impact an undetected population, but the likelihood is so small, that it is insignificant and discountable. See the T&E BA (12/98), pages 71-75 and 79 and the FEIS chapters 1, 2, and Appendix A. The development of a new survey strategy for small whorled pogonia is included in the Conservation Plan (Appendix A p. 12).
Commentor(s)	21, 22, 23
Comment 57	The fact of the matter is that there are potential negative effects to the Indiana bat that must be considered in the Draft EIS. Why doesn't the Draft EIS discuss these potential negative effects? Why doesn't the Draft EIS discuss the fact that all three alternatives would result in higher levels of cutting than that considered by the Biological Opinion?
Response	Alternatives considered in the DEIS do not result in levels of harvest that exceed the BO. Activities included in the incidental take statement in the BO will be monitored by the ANF and FWS quarterly. Additional consultation between the ANF and FWS would be needed if levels of activity would exceed limits set on the incidental take statement (USDI-FWS 2000).
Commentor(s)	21, 22, 23
Comment 58	The Environmental Impact Statement must evaluate all threats to these species and develop management proposals to abate those threats. For example, the Notice in the Federal Register makes no mention of deer impacts on the Small-whorled Pogonia, even though this constitutes a major threat to population viability.
Response	The Pennsylvania Game Commission has the regulatory authority for management of the white-tailed deer herd. Impacts on Small-whorled pogonia from deer are beyond the control of the ANF and are beyond the scope of this analysis.
Commentor(s)	21, 22, 23
Comment 59	The first problem is that the Draft EIS for Threatened and Endangered Species on the Allegheny both fail to address the factual implications of even-aged cutting methods that may result in canopy closures between 50 and 70 percent. The actual findings suggest that the median of resulting canopy closure is within that range of 50 to 70 percent canopy closure but that canopy closure from even-aged cutting methods, especially salvage cutting methods, often results in canopy closures less than 50%. This fact however is not addressed within the environmental analysis here.
Response	The T&E BA (12/98) includes the results of an analysis conducted on the ANF in the summer of 1998 that was designed to answer questions related to the post-harvest condition following even-aged partial harvest methods. These data show that post-harvest canopy closures ranged from 62% to 77%. These results are displayed in the DEIS on page 47.

Commentor(s)	21, 22, 23
Comment 60	(Re: Salvage thinning and sanitation Cutting) Their inclusion as "intermediate" treatments describes this. Therefore, both of these cutting methods create similar problems as do shelter wood cutting. For if it is indeed true (which we argue it is not) that these cuts promote "optimal" habitat conditions for Indiana bats they will then also result in greater mortality for the bats due to subsequent logging activity.
Response	The potential adverse impact of take from cutting both green and salvage sales is addressed in the BA (12/98)(pp.31-34) and the BO (pp. 21-33). The conclusions reached are that incidental take cannot be avoided. The BO examines this in detail and concludes that the level of incidental take anticipated with continued implementation of the Forest Plan does not jeopardize the continued existence of the Indiana bat. The BO then mandates Terms and Conditions to lower this potential level of incidental take.
Commentor(s)	21, 22, 23
Comment 61	Indiana bats are known to use exclusively dead and dying trees in parts of their range (Kurta 1999). Salvage cutting targets dead and dying canopy trees first. ... "Salvage" cutting, as a result, is likely to contribute to the killing of Indiana bats. This important aspect of the impacts of "salvage" logging is ignored by the BO and Draft EIS for threatened and Endangered Species. This is an important problem that needs to be address in new revised EIS.
Response	The potential adverse impact of take from cutting both green and salvage sales is addressed in the T&E BA (12/98)(pp. 31-34) and the BO (pp.21-33). The conclusions reached are that incidental take cannot be avoided. The BO examines this in detail and concludes that the level of incidental take anticipated with continued implementation of the Forest Plan does not jeopardize the continued existence of the Indiana bat. The BO then mandates Terms and Conditions to lower this potential level of incidental take.
Commentor(s)	21, 22, 23
Comment 62	In particular, the economic analysis for Draft EIS must follow an analysis strategy such as that described in the Forest Service report entitled "Assessing Economic Tradeoffs in Forest Management" (PNW-GTR-403). This report is the first one from the Forest Service to truly attempt to incorporate current economic thought into the Forest Service's economic analyses. It is truly a good starting point. The economic analysis should consider the most recent information (the best available information) published by professional economists.
Response	The information related to economic analysis contained in the PNW-GTR-403 publication titled "Assessing Economic Tradeoffs in Forest Management" is directed at the scope of a Forest Plan Revision and evaluating tradeoffs of Forest management alternatives. The Abstract reads: " Method is described for assessing the competing demands for forest resources in a forest management plan by addressing economics values, economic impacts, and perceptions of fairness around each demand. Economics trends and forces that shape the dynamic ecosystem-economy relation are developed. The method is demonstrated through an illustrative analysis of a forest management decision in the southern Appalachian Mountains." The scope of this decision (EIS, Chapter 1 p.1) and subsequent economic analysis (EIS, Chapter 4 pp. 89-90) does not look at Forest Plan alternatives but at the economic effects of incorporating alternative sets of standards and guides into the current Forest Plan direction. The economic analysis in the EIS was based on the type of economic analysis completed in the Forest Plan and at a level of detail appropriate for the decision being made.
Commentor(s)	21, 22, 23
Comment 63	Impoundments may cause increased siltation downstream (Rooney 1994). This needs to be considered in the analysis of the impacts to the mussel.
Response	The analysis of impacts to mussels from sediment is in the T&E BA (12/98)(pp. 48-61) and reflects continued implementation of the Forest Plan. Based on monitoring and the Fisheries Amendment, Forest Plan S&G's, which are applied across the ANF, are adequate to minimize sediment.

Commentor(s)	21, 22, 23
Comment 64	At minimum, the comparison of requirements in the BO with those in the Plan should have been presented in the Draft EIS.
Response	A discussion of the comparison is presented in the EIS Chapter 2 (pp. 21-28) and Appendix B.
Commentor(s)	21, 22, 23
Comment 65	The actions called for by the Forest Plan exceed the Incidental Take allowed by U.S. Fish and Wildlife Service in their BO. There is no discussion in the Draft EIS as to why this would be appropriate. That is, of course, because it is not appropriate to allow cutting regimes greater than those allowed in the BO.
Response	Terms and conditions are provided in the BO to minimize incidental take. The actions that contribute to incidental take cannot exceed the total incidental take provided in the BO (p. 67). The Forest Service will closely monitor activities to ensure that the authorized level of incidental take is not exceeded and will provide data to FWS on a quarterly basis (USDI-FWS 2000).
Commentor(s)	21, 22, 23
Comment 66	Site 18 of Dr. Gannon's 1998 Survey for bats on the Allegheny as done in the Six Pipes Timber Sale Area. The area surrounding the survey was being logged at the time. This site resulted in the least number of bat calls of any of the sites. In fact, the second visit resulted in zero detected calls. This suggests that logging is likely detrimental to localized bat activity during implementation. This site should be studied for post implementation bat activity. The Draft EIS must document these types of effects to the bat. The current Draft EIS fails to document them.
Response	This is a misinterpretation of Dr. Gannon's study results. The study was not designed to determine differences in number of bat calls due to logging activity in the area. A close examination of the results shows that the number of bat calls varies each time a survey is completed. Indiana bat survey results were considered in the T&E BA (12/98)(pp. 22-24) and the BO (p. 43). They do not need to be addressed here as the purpose of this analysis is to: 1) identify how new information and requirements pertaining to the four T&E species contained within the USDI Fish and Wildlife Service Biological Opinion, and the five species contained within the Conservation Program for T&E Species on the Allegheny National Forest affects the implementation of the Forest Plan; and 2) identify what changes are needed in current Forest Plan S&G's and monitoring requirements.
Commentor(s)	21, 22, 23
Comment 67	Dr. Gannon's comments on the Indiana bat Recovery Plan make our point clear and concise: "Destruction of summer habitat, whether it takes place during the summer when Indiana bats are active, or during the winter when they are hibernating, can potentially have a great impact on Indiana bat populations."
Response	Timber harvest does not equate to habitat destruction. Many timber treatments enhance habitat by creating optimum canopy conditions for roosting and foraging (Romme et al 1995) (EIS Chapter 3 pp. 54-57). Furthermore, applying S&G's to retain potential roosting trees in timber harvest units provides roosting habitat. The effects of timber harvest is discussed in the BA (12/98) (pp. 31-34).
Commentor(s)	21, 22, 23
Comment 68	The statement that "Summer roost ... habitat is found in great abundance throughout the ANF" is premature. Roosting habitat for the Indiana bat has not been documented yet. Therefore the language should be changed to state the following: "This species has been recently found to occur within the Allegheny National Forest. Summer foraging habitat is found in great abundance throughout the ANF. Roosting habitat and use of the Allegheny National Forest is still, as of yet, undetermined. Habitat for this species must be provided through implementation of standards and guidelines."

Response	The HSI model was used to analyze the suitability of habitat on the ANF for the Indiana bat (EIS Chapter 3 pp. 54-57). Based on this analysis, the Forest Service concluded that suitable and optimum roosting habitat is plentiful on the ANF and "it does not appear that habitat would limit the occurrence of Indiana bat across the ANF" (EIS Chapter 3 (pp. 55-56). Although we have not documented Indiana bats actually roosting on the ANF, statements in the DEIS pertaining to the quality of the roosting habitat remain valid.
Commentor(s)	21, 22, 23
69	<p>The Draft EIS fails to analyze the impacts of changing the Canopy closure requirements for partial cutting units from 54% to 50%. The MEAN canopy closures for partial cutting units are present in Table 18 of the Draft EIS on page 47. This table presents the lowest mean following a partial cut to be 62% canopy closure. Why then the reduction?</p> <p>The change appears entirely unnecessary. No justification is given for this change. The USFWS made a Biological determination that 54% was what was needed for the bats.</p>
Response	Optimum foraging habitat is described in the HSI model as canopy closure between 50 – 70 percent. There is no impact of changing from 54% to 50% canopy closure since optimum foraging conditions are maintained. Site-specific conditions and analysis will determine the canopy closure to achieve when implementing a project.
Commentor(s)	21, 22, 23
Comment 70	On page 10 it is stated they are using the most current scientific knowledge by using portions of reports such as the most recent USDI-FWS 1999 Indiana Bat Recovery Plan. However, on page 11 and subsequent pages they cite the 1996 USDI-FWS Indiana Bat Recovery Plan rather than the 1999 version.
Response	Several topics were addressed in more detail in the 1996 Draft Recovery Plan than the 1999 Draft Recovery Plan and vice versa. A comparison of the differences between the two drafts and how each item was used in the DEIS is provided in the project file. Where statements were similar in the two drafts, the 1999 citation was used.
Commentor(s)	60
Comment 71	No side-by-side comparison of the S&G's and State standards, however, is presented. We recommend that this type of comparison be included. Our cursory examination of the State's Special Protection Waters Implementation Handbook revealed that in some cases State standards are more stringent than those contained in the Forest Plan. For example, the State requires maintenance of a 150-foot buffer strip, plus four feet for each one degree slope, along streams during timber harvesting, while the current S&G (Table 11 of DEIS; p. 4-24 of Forest Plan) requires a 50-foot strip, plus two feet for each one degree of slope. The biological opinion requires that, "at a minimum, these standards and guidelines must be equivalent to State guidelines applicable in High Quality and Exceptional Value watersheds, and should reflect the best available measures for controlling erosion and sedimentation."
Response	<p>A comparison of State Best Management Practices (BMP's) and Forest Plan Standards and Guidelines was updated as part of the effects analysis. The standards and guidelines in the Forest Plan including a referenced document "Guidelines for Road Design in Proximity to Streams on the Allegheny National Forest" meet, at a minimum, the State BMP's for HQ and EV streams.</p> <p>Even though the distances between the different buffer zone calculations were small, Alternatives 1 and 2 have been modified. They now include a revised standard and guideline (T&E FEIS, Table 6, # 15 p. 33) that matches the State BMP for buffer width calculation.</p> <p>The ANF produced a Forest Plan in 1986 that includes standards and guides for controlling non-point source pollutants in all streams on the ANF. Some of these were amended in 1996. The BMP's of the State and of the ANF are similar, but are worded differently in most cases. However, the objectives are the same, which is, minimizing the introduction of non-point source pollutants to nearby stream courses.</p> <p>The advantage that the ANF has is that activities are administered in the field by ANF employees, ensuring that appropriate standards and guides are implemented. For every proposed earth-disturbing project,</p>

mitigation measures are developed and specified in the environmental analysis and decision process that implements the Forest Plan standards and guidelines. Those mitigation measures are developed based on actual field investigations by ANF employees. Where site-specific conditions dictate, guidelines can be increased or supplemented to better meet the objective of minimizing non-point source pollutants. This is why some of the ANF standards and guidelines are more objective oriented, rather than stating a specific numerical criterion, e.g. filter strip widths. The ANF Forest Plan monitoring also provides a check on whether these measures are meeting the intent of the standards and guidelines. Monitoring since 1987 has indicated that current standards and guidelines work.

The standards and guidelines in the Forest Plan that address the protection of water quality not only cover HQ and EV streams, but Cold-water Fisheries as well. The State BMP's were specifically written for HQ and EV streams only. Many of the Forest plan standards and guidelines not only apply to the perennial streams, but also to intermittent streams. Considering the significantly wider application of these Forest Plan standards and guidelines, they far exceed the protection offered by just applying the State BMP's to a more limited stream class.

Commentor(s)

60

Comment 72

The potential positive effects to Indiana bat habitat associated with timber harvest (primarily intermediate or partial harvests) are presented in the DEIS in a misleading manner because the following points are omitted or under-emphasized:

1) bats could be harmed or killed during timber harvest operations, 2) the pre-harvest habitat may have been just as suitable as the post-harvest habitat, 3) any potential benefits (e.g., through reducing canopy closure) are short-term and are lost when the final harvest is completed, and 4) the final harvest is likely to reduce canopy closures to levels below those considered suitable for Indiana bats. Therefore, statements to this effect should be qualified or removed from the Conservation Program and elsewhere in the DEIS (e.g., p. 15; Table 17; Table 18).

Response

The effects of timber harvest on Indiana bat were discussed in the T&E BA (12/98). Information is presented in Chapter 3 in the DEIS so that the reader can assess the impacts of changes to S&G's on timber harvest activities (as is presented in Chapter 4 pp. 54-58). This information was taken from the T&E BA (12/98) (pp. 32-36).

The purpose of table 18, is to display the impacts of partial timber harvests (thinning, shelterwood seed cuts, selection harvests, salvage harvests) on canopy closure, and is not intended to make any statement towards the impact of regeneration harvests. To help understand the information in the table, we included a statement that points out the short-term nature of canopy closure improvements that result from shelterwood seed harvests (See Chapter 3 p. 56).

Commentor(s)

62

Comment 73

The analysis also needs to consider the impact the logging will have on opening the area which allows other species of bats and birds to compete with the Indiana bat for the insects.

Response

Impacts of timber harvesting, road building, and other forest management activities are analyzed in the T&E BA (12/98)(pp. 31-41), BO (pp. 44-56), and Forest Plan FEIS. The purpose of this analysis is to: 1) identify how new information and requirements pertaining to the four T&E species contained within the USDI Fish and Wildlife Service Biological Opinion, and the five species contained within the Conservation Program for T&E Species on the Allegheny National Forest affects the implementation of the Forest Plan; and 2) identify what changes are needed in current Forest Plan S&G's and monitoring requirements. As such the DEIS analyzed the impacts of implementing new standards and guidelines for T&E species provided in the BO.

Commentor(s)

62

Comment 74

We also included a copy of the USFWS's comments on the draft recovery plan. They need to be considered.

Response

The EIS incorporates the most current information for Indiana bats contained in the 1999 Draft Indiana Bat Recovery Plan, scientific literature, and survey data from Pennsylvania (specifically the ANF). The additional scientific literature that is listed for consideration includes papers by Clawson, Gardner, Kurta,

and Brack, all of whom serve on the Indiana Bat Recovery Team and have incorporated their findings into the Recovery Plan. The T&E BA (12/98) and BO (6/99) contain an extensive analysis of the information relevant to Indiana bats on the ANF.

Comment 75	However, the study ignores the blatant effects of clear cutting and road building on these endangered species.
Response	Impacts of timber harvesting, road building, and other forest management activities are analyzed in the T&E BA (12/98)(pp. 31-41), BO (pp. 44-56), and Forest Plan FEIS. The purpose of this analysis is to: 1) identify how new information and requirements pertaining to the four T&E species contained within the USDI Fish and Wildlife Service Biological Opinion, and the five species contained within the Conservation Program for T&E Species on the Allegheny National Forest affects the implementation of the Forest Plan; and 2) identify what changes are needed in current Forest Plan S&G's and monitoring requirements. As such, the DEIS analyzed the impacts of implementing new standards and guidelines for T&E species provided in the BO.
Commentor(s)	21, 22, 23, 60
Comment 76	The DEIS does not address the impacts of timber cutting on the Indiana bat.
Response	Impacts of timber harvesting, road building, and other forest management activities are analyzed in the T&E BA (12/98)(pp. 31-41), BO (pp. 44-56), and Forest Plan FEIS, chapter 4. The purpose of this analysis is to: 1) identify how new information and requirements pertaining to the four T&E species contained within the USDI Fish and Wildlife Service Biological Opinion, and the five species contained within the Conservation Program for T&E Species on the Allegheny National Forest affects the implementation of the Forest Plan; and 2) identify what changes are needed in current Forest Plan S&G's and monitoring requirements. As such, the DEIS analyzed the impacts of implementing new standards and guidelines for T&E species in the BO.
Commentor(s)	21, 22, 23, 60
Comment 77	An analysis must be done to determine if Forest Service water quality standards are equal to or better than the state standards as required in the BO. Establish standards for inclusion in the Forest Plan.
Response	Alternatives 1 and 2 have been modified to include a revised S&G that matches the State BMP (EIS p. 33).
Commentor(s)	21, 22,23
Comment 78	The non-discretionary Reasonable and Prudent Measures contained within the Biological Opinion requires that the Forest Service "determine the use of the ANF by Indiana bats during hibernation, summer roosting, maternity, and pre-hibernation seasons." The proposed Amendment to the Plan, however, only includes monitoring for the bat in its foraging and roosting habitats. The proposed Amendment does not accurately reflect the requirements of the Biological Opinion.
Response	Page 26 of the DEIS has been rewritten to reflect the necessary change. Appendix A addresses the reasonable and prudent measures for Indiana bat found in the BO.
Commentor(s)	21, 22, 23
Comment 79	The ANF monitoring plan must be revised to reflect monitoring requirements for the Indiana bat. All monitoring requirements must be addressed in the DEIS.
Response	The monitoring requirements for Indiana bat have been revised (see Chapter 2 p.40).
Commentor(s)	12
Comment 80	55. (per page viii par. 3) In protecting (your definition), these trees, what will your damage control be?
Response	Protection measures are listed under the Bald eagle - Chapter 2 and Appendix A – Conservation Program.

Commentor(s)	12
Comment 81	139. How many shag bark hickory's are you referring to[0]?
Response	The latest Forest Survey Report, "Forest Statistics for the Allegheny National Forest--1989" estimated that there are 775,000 hickory trees on the ANF. However, these are not all shagbark hickory. This amount represents 0.34 percent of all the trees estimated on the ANF.
Commentor(s)	21, 22, 23
Comment 82	That Goal was to achieve one nesting Eagle by 2020. Today the Forest has three active nests of Bald eagles. The Forest Service ought to revisit that Goal and raise it to a more optimal number.
Response	The current Forest Plan direction and desired future conditions (particularly MA 6.1, 6.2, and 5) along with standards and guidelines for Bald eagles will provide suitable nesting habitat for a large population of Bald eagles. However, since Bald eagle populations are affected by many activities beyond those on the ANF, we prefer not to speculate on the number of nesting pairs that may inhabit the ANF by 2020. We will focus S&G's on habitat and protection of individuals. Monitoring will track Bald eagle populations and the use of the habitat over time.
Commentor(s)	21, 22, 23
Comment 83	"Within the portion of the ANF that drains into the Allegheny River, the Forest Service will monitor Timber Sales, oil and gas activity, and other activities that could possibly degrade water quality to determine if these measures are being implemented and if water quality degradation occurs." (BO, p. 70) This must be addressed within the Amendment by spelling out this requirement within the Standards and Guidelines of the Plan.
Response	The terms and conditions implement the reasonable and prudent measures and outline required reporting/monitoring requirements (BO p. 70). The terms and conditions that implement the reasonable and prudent measure for water quality are 2b, 2c, and 2f on pages 76 and 77 of the BO. The explanation for the disposition of these terms and conditions is found in the DEIS on pages 15 and 16 of Appendix B.
Commentor(s)	21, 22, 23
Comment 84	Requirements for snag retention by guidelines need to be revised to be consistent with the new guidelines in all cases. In instances where Management Area Guidelines exceed the retention call for in the new proposed guidelines the older guidelines should be retained in addition to the new guides.
Response	Table 11 in the DEIS has been changed to show that S&G's pertaining to snag trees will be retained. New S&G's that further define snag tree requirements are included in the proposed action. Chapter 2 (p. 37) shows all S&G's that will be either added, revised or deleted with the Plan Amendment.
Commentor(s)	21, 22, 23
Comment 85	All of the existing Denning requirements are consistent with the BO and should not be removed.
Response	Table 11 in the DEIS shows that existing S&G's pertaining to den tree requirements are to be retained as is, with no revision. Chapter 2 (p. 37) shows all S&G's that will be added, revised or deleted with the Plan Amendment.
Commentor(s)	21, 22, 23
Comment 86	3. The standards and Guideline that states: "Identify and manage potential nest trees in suitable locations for the Bald eagle and osprey" should be retained. Page 35 of the Draft EIS implies that the Forest Plan will be revised to remove this requirement. This requirement must not be removed from the Forest Plan for it is important for Bald eagle recovery. It is also important for providing potential Osprey nesting sites.
Response	This S&G is not being removed (see Chapter 2 p. 27). Additional new S&G's are designed to increase protection to T&E species. Chapter 2 (p. 37) lists all the changes that will be made to the Forest Plan S&G's.

Commentor(s)	21, 22, 23
Comment 87	The Forest Service must amend the Plan to include the following Standard and Guideline: 20. The Forest Service will work closely with the US Fish and Wildlife Service regarding the installation or operation of any new access sites (e.g. recreational, boating) to be authorized, funded, or constructed by the Forest Service on the Allegheny River. Surveys for Clubshell and Northern riffleshell mussels will be conducted to determine their use of habitat in the vicinity of proposed access sites. -- To be added to page 4-39 of the Forest Plan.
Response	Consultation with FWS prior to development of new access sites on the Allegheny River and an assessment of potential impacts to endangered mussels are covered in the Conservation Program (EIS, Appendix A p. 11). This consultation process is also addressed in the Allegheny Wild and Scenic River EIS and Management Plan (1996).
Commentor(s)	21, 22, 23
Comment 88	Additionally, the Guideline qualifies that hickory is to be retained only where it occurs naturally. It doesn't matter to the Indiana bats if their roost "occurs naturally" or not. The existing phrase leaves potential roost trees open to future removal based on the easily manipulated concept of natural occurrence. Changing the language of the existing guidelines to reflect the language of the Term and Condition would address this problem.
Response	Hickory is not a species that is planted as part of the ANF reforestation program. Therefore any hickory tree that is encountered is naturally occurring. No changes are needed for this S&G.
Commentor(s)	21, 22, 23
Comment 89	Threats to the Small-whorled pogonia include even-aged logging (Rooney 1994:27). The Draft EIS must incorporate mitigation measures that help avoid soil compaction and trampling - both of which cause habitat degradation (Rooney 1994:27).
Response	Soil Compaction and Trampling are addressed in the S&G's of the current Forest Plan. On page 4-21 through 4-23 of the Forest Plan, standards and guides are provided for soil and water conservation. In summary, the standards and guidelines state that surface area disturbed by logging should be less than 15% on soil groups 1 and 2 and only low ground pressure equipment is allowed on Soil Group 3.
Commentor(s)	21, 22, 23
Comment 90	On page 6 it is stated the BO includes terms and conditions that are more restrictive than existing Forest Plan standards and guidelines. The following item then states that after receipt of the BO and further consultation with the FWS they will change a canopy closure requirement from >54% to >50%. This implies that the only change to be made after consultation with FWS and receipt of the Bo is changing one canopy closure requirement. Why were the more restrictive terms and conditions not included?
Response	Page 6 of the DEIS is simply a summary of the new information for the Indiana bat that has developed since 1986. It is not meant to imply that the only change needed in the Forest Plan is a change in canopy closure requirements. All needed changes are identified in the detailed description of Alternative 1 in Chapter 2 (p. 36).
Commentor(s)	21, 22, 23
Comment 91	Instead of ignoring this Term and Condition the Forest Service should be looking to develop guidelines that will assist in the instance that previously unknown maternity sites are discovered within 1.5 miles of ongoing activities.
Response	We agree it would be helpful to have measures in place should a maternity roost tree be discovered. At this time we will follow the BO (p. 73) and consult with the Fish and Wildlife Service when a roost tree, either male or maternity, is discovered. At a future date we will consult further on the matter.

Commentor(s)	21, 22, 23
Comment 92	Instead of weakening this Term and Condition the Forest Service should be looking to develop guidelines that will assist in the instance that previously unknown Roost trees are discovered within 1.5 miles of ongoing activities. At minimum, the Forest Service must consider the following guideline: "In the instance that an Indiana bat roosting site is discovered within a 1.5 mile radius of known disturbances with the potential to negatively affect the bats, all activities should cease until the Forest Supervisor, in consultation with the U.S. Fish and Wildlife Service, had made a determination in regard to whether or not those activities stand to harm the bats. Consistent with the guidelines at Forest Service Manual 1922.5 this determination should be documented in written decision that is made available to the public. This decision is appealable by interested and affected citizens."
Response	The Term and Condition is not weakened. It is found on pp. 72 and 73 of the BO and the EIS, Appendix A (p. 7). It states that known roost trees will be protected and activities within 1 1/2 miles of an Indiana bat maternity site shall be subject to further consultation.
Commentor(s)	50
Comment 93	What are S & Gs for instance? The Summary never defines them. Is that a management zone within the forest?
Response	S&G's stands for standards and guidelines (DEIS, p. 1). See glossary for definitions of these two terms.
Commentor(s)	60
Comment 94	The last sentence of the first paragraph states that it is "conceivable that a roost tree could be discovered within a stand proposed for harvest; the roost tree would be protected." This fails to acknowledge that such an instance would require consultation with the FWS and may require significant limitations on timber harvesting in the vicinity of the roost tree, particularly if it is a maternity roost tree. This same statement appears in the 3rd paragraph under Indiana Bat on page 69 of the DEIS.
Response	The DEIS, pages 67 and 69, has been rewritten to require consultation when needed.
Commentor(s)	60
Comment 95	It would be helpful to include measures to protect maternity sites on the Forest, should they be found. Some National Forests have included buffers around maternity sites within which land management activities are restricted to protect Indiana bats and conserve their maternity habitat. Such measures could be included after consultation with the FWS.
Response	We agree it would be helpful to have measures in place should a maternity roost tree be discovered. At this time we will follow the BO (p. 73) and consult with the Fish and Wildlife Service when a roost tree, either male or maternity, is discovered. At a future date we will consult further on the matter.
Commentor(s)	60
Comment 96	Also, the DEIS (p. 63) states that the FWS concluded that existing S&G's in the Forest Plan adequately protect water quality for the clubshell and northern riffleshell. This is incorrect. Rather, our biological opinion concluded that non-point source pollution (e.g., sediment) from timber harvesting, road building, and other soil-disturbing activities could decrease water quality for these species. This was the purpose of the water quality monitoring requirements in the biological opinion.
Response	We will change page 63 of the DEIS to reflect the BO's conclusion for non-point source pollution.
Commentor(s)	60
Comment 97	"Abandoned nest trees" (item 2c; see also item 6 in Table 6). Please indicate restrictions associated with the 330-foot buffer. We recommend including the same restrictions detailed under "protection of individuals" (item 1).

Response	We will add the following wording to Table 6, item 4 (p. 30). "Prohibit disturbances within this buffer zone as stated in #1." For item 2c of the Conservation Program (Appendix A p. 3), we will add: Prohibit disturbances within this buffer zone as stated under "Protection of Individuals."
Commentor(s)	60
Comment 99	"Protection of individuals" (item 1; see also item 1 in Table 6). The term "abandoned" includes nests abandoned for any reason (e.g., move of adults, fallen nest tree, fallen nest, and damaged nest). This should be clarified/defined in the Conservation Program.
Response	We will rewrite this section to note that "abandoned" includes nests abandoned for any reason (e.g., move of adults, fallen nest tree, fallen nest, and damaged nest) (EIS p. 37, Appendix A p. 4).
Commentor(s)	60
Comment 99	Reinstate the previous S&G (p. 4-38 of Forest Plan) which provided for a 1,320 foot buffer around nests, but modify it to prohibit management activities from January 15 to July 31 that may affect nesting eagles.
Response	We will reinstate "Restrict management activities that result in adverse disturbance to nesting birds within approximately 1,320 feet of each nest location between January 15 and July 31." (EIS p. 37).
Commentor(s)	60
Comment 100	"Protection of individuals" (item 4c). This should read "recreational use of the Allegheny River that may affect bald eagles." This is the appropriate threshold for consultation--not recreational use that is found to be adversely affecting eagles. Once adverse effects have been noted, "take" has probably already occurred.
Response	We will correct item 4c to read: "Recreational use of the Allegheny River that may affect Bald eagles."
Commentor(s)	60
Comment 101	The terms and conditions of the biological opinion also stated that the "Forest Plan shall be revised to state that the S&G's intended to protect water quality are mandatory and minimum requirements that are enforceable by the Forest Service." The proposed alternative, however, fails to amend the plan to meet this requirement (e.g., DEIS, Table 6; and Appendix B, Table 3, p. 17). This term and condition was deemed necessary to conserve the clubshell and northern riffleshell based [on] the Forest Service's statement that S&G's provide guidance and direction, but are not considered mandatory.
Response	Under the National Forest Management Act, the provision of and adherence to management S&G's is implicit. The implementing regulations, 36 CFR 219.1, state that establishing S&G's is one of the main purposes of the Act. The responsibility of the Forest Supervisor to implement the Forest Plan is clearly stated in 36 CFR 219.10 (a) (2). And 36 CFR 219.11(c) indicates that the Forest Plan shall contain S&G's. In the Forest Plan FEIS, page 4-123, the direction is clear that S&G's must be followed unless the Forest Plan is amended or through a project environmental analysis, both of which require consultation and concurrence with the Fish and Wildlife Service if the analysis shows an adverse impact to T&E species. The preface to the Forest Plan S&G's on page 4-5 of the Forest Plan also states that these S&G's "will be carried out". In conclusion, the S&G's are "mandatory," and a S&G such as proposed for water quality would not be necessary. The proposed standard would also mislead others to conclude that the other S&G's in the Forest Plan are not mandatory.
Commentor(s)	63
Comment 102	It isn't clear (from the summary) (1) what if any actions can be taken or would be taken for the benefit of the Small Whorled Pogonia.
Response	We have completed over 227,000 acres of survey without finding small whorled pogonia. The development of a new survey strategy is included in the Conservation Plan (Appendix A p. 12).

Commentor(s)	21, 22, 23
Comment 103	The terms and conditions of the BO have not been incorporated into the DEIS.
Response	The Terms and Conditions and existing S&G's have been compared to determine what changes to the Forest Plan are needed. See Appendix B and Chapter 2 (pp. 29-33).
Commentor(s)	21, 22, 23, 48, 60
Comment 104	A detailed description of the Zebra mussel exclusion program is needed. An analysis must be done to show its effectiveness.
Response	The Zebra Mussel Action Plan, which is a part of the ANF CP, details the actions that will be taken at ANF boating facilities. Several options for implementation had been considered. The Action Plan was developed for the option that was determined to be the most efficient.

NEPA PROCESS

Commentor(s)	12
Comment 105	223. Tell me, what you[r] looking for--in these comments from the public.
Response	The purpose of scoping is explained in the EIS on page 8, Appendix C, the Notice of Intent published in the Federal Register on February 8, 1999, the public scoping letter of February 4, 1999, and CEQ regulations at 1501.7.
Commentor(s)	13
Comment 106	Rebecca McLain's (University of Washington) research has clearly demonstrated that politically and economically marginalized publics (or actors, as she calls them) are completely or effectively excluded by the Forest Service from having input into forest management decisions. The management team did not respond to the questions in my letters of March 8[,] 1999[,] and August 1[,] 1999. Further, the management team refused to consider the legally-binding requirements that I pointed to in my March 8[,] 1999[,] and recapitulated in this letter. Instead, my comments have been changed and inserted into Appendix C. As McLains's research shows, my comments submitted on behalf of the Pennsylvania Chapter of the Sierra Club and the Allegheny Defense Project have been effectively excluded.
	 It is absolutely urgent that we set up a meeting as soon as possible to discuss these points. Either the management team did not understand my comments, or understood my comments and altered them to exclude my participation.
Response	The intent of CEQ regulations at 1501.7 concerning public comments is clear and have been followed in the preparation of the DEIS. Scoping comments are considered in our analysis. However, explicit answers to scoping comments are not required by CEQ regulations. We have painstakingly summarized the comments we received during scoping in Appendix C so as not to exclude any comments. In the examples shown, the content of the letters were concerned with sensitive species. An alternative that proposes changes to the Forest Plan that addresses needs of sensitive species was considered but eliminated from detailed study (See Chapter 2, p. 45) Conservation Strategies and Assessments that would outline possible Forest Plan changes have not yet been completed, therefore this comment is premature. Any changes to the Forest Plan that might be needed to address the needs of sensitive species would be considered at a future date.
Commentor(s)	21, 22, 23
Comment 107	The roots of this conflict are simple. In their Biological Assessment (BA), the Forest Service substituted a new proposed level of programmatic action for the one included in the Plan. But the Forest Service can not do this. The Forest Service can not make a change such as that suggested in the BA without amending the Forest Plan to reflect that change.

Response	Program levels contained within the Forest Plan represent the upper limit of production that would be allowable under the Plan. We used levels in the T&E BA (12/98) and BO that reflect more realistic program levels over the short term (BO, p. 67; USDI-FWS 2000). The Forest Service did not propose new program levels.
Commentor(s)	21, 22, 23
Comment 108	<p>So, it is clear that the Biological Opinion did not even consider whether or not management Objectives for Management Area 3.0 need to be changed. That decision was not within the purview of the BO.</p> <p>Indeed, there is a very specific place where that decision is supposed to be made - the Forest Plan amendment for Threatened and Endangered Species.</p>
Response	<p>Chapter 1 discusses the relationship of the primary applicable laws that affect this analysis. New information on T&E species prompted the need to consult with FWS (p. 4-5). Issuance of the BO indicated that several S&G's needed to be revised/added and that changes to the monitoring plan were needed (pp. 21-28; Appendix B). NFMA requires that amendment to the Forest Plan be made (pp. 2-3). NEPA requires that environmental documentation be prepared that analyzes the effects of proposed changes (p. 3). Timely consideration of requirements in the BO can be made now through this non-significant amendment. Broader issues associated with scheduled Forest Plan revision are not yet ripe for consideration and can be addressed when the Plan is revised in 2002/2003.</p>
Commentor(s)	21, 22, 23
Comment 109	The Forest Service should not be adding language to the Manuals when citing them. This is entirely improper and potentially leads the reader astray from the actual intent of the Forest Service Manuals. This is a major offense that must be corrected in a revised Draft EIS.
Response	The DEIS manual reference was paraphrased to make it more reader friendly. The DEIS has been changed to the exact manual quote (Chapter 1, pp. 2-3).
Commentor(s)	21, 22, 23
Comment 110	<p>The Forest Service claims that this amendment fits these requirements at FSM 1922.51 for non-significant amendments:</p> <p>Regarding item (b), however, their response interestingly has nothing to do with the example given in the FSM Sec. 1922.51. The example of a non-significant amendment given at FSM Sec. 1922.51(b) is related to the need to make minor changes to management area boundaries and prescriptions. This amendment is an entirely unrelated proposal and citing to this condition is entirely inappropriate.</p> <p>Regarding item (c), the Forest Service implications that the changes to Forest Plan standards and guidelines are minor are absurd. If the changes are minor, then how could it be that the U.S. Fish and Wildlife Service determined that the failure to incorporate them would jeopardize the continued existence of the Northern riffleshell mussel and constitute a violation of the Endangered Species Act (ESA)?</p> <p>The problem with this proposed amendment is exactly what the Forest Service is implying, that "the proposed changes...will not substantially change how the ANF is currently being managed." This is a serious problem that stands to threaten the viability of many species on the Alleg[h]eny National Forest including the Bald eagle, the ???</p>
Response	Discussion that supports the determination that this amendment is a non-significant amendment is found in Chapter 1 on pages 2-3. This determination was made by considering the proposed changes to the Forest Plan (i.e., Alternative 1) in context with Forest Service Manual direction.

Commentor(s)	21, 22, 23
Comment 111	<p>This is important in this case because the Forest Service chooses not to amend any of the goals and objectives in the Forest Plan. Their position is unsupportable (as we will discuss later in these comments) but nevertheless it is their position. Therefore, as presented this Forest Plan amendment may not meet the first example given at FSM 1922.51. This proposed amendment does however, indubitably, meet the second example.</p> <p>The proposed changes to boating activity stand to significantly affect the recreation aspects of the Plan. Alternative 2 would result in the reduction of all recreational boating goals and objectives to zero.</p> <p>In addition, proposed changes in the Draft EIS to the Forest Plan for the endangered Indiana bat would call for mitigation measures that would have impacts on logging activities in the forest. Since logging activities occur on over 3/4 of Allegheny land, this would clearly have far-reaching implications for various aspects of the Plan.</p> <p>Management Area 3, which makes up approximately 2/3 of the Allegheny land base, would be the most affected since its primary goal is the cutting of forests for the benefit of the lumber market.</p> <p>Proposed changes for the Bald eagle would result in changes in the management of much of the Management Area 6.1 land base. This includes buffers for nests, restrictions on management activities, and so forth. Changes proposed in the Draft EIS also call for major changes to the monitoring section of the Plan.</p>
Response	<p>Discussion that supports the determination that this amendment is a non-significant amendment is found in Chapter 1 on pages 2-3. This determination was made by considering the proposed changes to the Forest Plan (i.e. - Alternative 1) in context with Forest Service Manual direction.</p> <p>The proposed changes to the Forest Plan (i.e. - Alternative 1) do not significantly change the recreational boating opportunity, and does not alter recreational goals and objectives. Discussion in Chapter 4 (pp. 86-87) shows that implementing Alternative 2 does have an effect on recreational boating opportunity.</p> <p>The proposed changes to the Forest Plan (i.e., Alternative 1) include minor modifications to existing S&G's that already call for the retention of den and snag trees. These S&G's already apply to areas on the ANF where timber harvest occurs. The primary difference between the existing S&G's and the new S&G's is that minimum diameter requirements are established. In practice, we had already been leaving trees in the diameter ranges specified in the new or revised S&G's. Therefore, there is minor impact from implementing the new S&G's. The effects are documented in Chapter 4 (pp. 76-81).</p> <p>The management of MA 6.1 does not change as a result of new S&G's for Bald eagle. Existing S&G's already define buffer zones that were to be applied in the event nests are found. These S&G's are still in effect for the species listed on page 4-38 of the Forest Plan. New S&G's for Bald eagle are quite similar to the existing S&G's; however, the new S&G's result in minor changes that make the Forest Plan consistent with Recover Plan requirements. The effects of implementing the new S&G's are documented in Chapter 4 (pp. 81-84).</p>
Commentor(s)	21, 22, 23
Comment 112	<p>The Forest Service gives their "rationale" for determining that the proposed amendment is not significant:</p> <p>This rationale is entirely incomplete. The assertion that effects "will generally occur on less than 3 percent of the ANF land area" is patently false. Annually, logging on the Allegheny can occur on as much as 14,039 acres which itself is 3% of the ANF land area. But this Plan amendment will affect timbering operations throughout the duration of the Plan. Over the years, nearly 75% of the Allegheny will be impacted by timbering operations. Therefore, changes in mitigation measures within the Plan have far-ranging effects on the land area of the Forest.</p>
Response	<p>Discussion that supports the determination that this amendment is a non-significant amendment is found in Chapter 1 on pages 2-3.. This determination was made by considering the proposed changes to the Forest Plan (i.e., Alternative 1) in context with Forest Service Manual direction. The statement quoted here "will generally occur on less than 3 percent of the ANF land area" (found on page 2 of the DEIS) should have been written as "will generally occur on less than 3 percent of the ANF land area per year." This section has been rewritten and this statement has been removed (see p. 3).</p> <p>The proposed changes to the Forest Plan (i.e. Alternative 1) include minor modifications to existing S&G's that already call for the retention of den and snag trees. These S&G's already apply to the areas of the</p>

forest where timber harvest occurs. The primary difference between the existing S&G's and new S&G's is that minimum diameter requirements are established. In practice, we had already been leaving trees in the diameter ranges specified in the new or revised S&G's. Therefore, there is minor impact from implementing the new S&G's. The effects are documented in Chapter 4 (pp. 76-84).

Commentor(s)	21, 22, 23
Comment 113	The Forest Service fails to adequately assess the following public comment from Thomas P. Rooney. The Forest Service must revisit these comments and properly address them in a revised EIS.
Response	The intent of CEQ regulations at 1501.7 concerning public comments is clear and have been followed in the preparation of the DEIS. Scoping comments are considered in our analysis. However, explicit answers to scoping comments are not required by CEQ regulations. We have summarized the comments we received during scoping in Appendix C. In the examples shown, the content of the letters were concerned with sensitive species and are beyond the scope of this analysis.
Commentor(s)	21, 22, 23
Comment 114	The Forest Service improperly and prematurely initiated scoping with its Notice of Intent in February of 1999. By conducting scoping prior to the issuances of the Biological Opinion (BO), the Forest Service narrowed the ability of the public to frame the discussions within the EIS. The public was left to anticipate what the BO would say. Therefore, the public was limited in its ability to assist in developing alternatives to the proposed action, identifying significant issues in need of discussion, and helping narrow the important issues that should be addressed in the EIS. In addition to being released prior to the BO, the Notice of Intent scoping period was conducted prior to the release of the report on the 1998 bat surveys.
Response	The proposed action, as described in the scoping notice, covered the five threatened and endangered species and the range of specific terms and conditions that were being considered and recommended in the T&E BA (12/98) on pages 75-80. The T&E BA (12/98) was prepared for the Fish and Wildlife Service for their consideration in issuing a BO. The BO issued on June 1, 1999 also addressed the same five species and the same range of terms and conditions described in the T&E BA (12/98). We do not believe the scoping document narrowed the public's ability to provide meaningful comment on any one of the five species. As stated in the scoping notice the BO is based on the T&E BA (12/98) and therefore would address the same range of species and terms and conditions.
Commentor(s)	62
Comment 115	The Forest Service should be preparing a Draft Supplemental EIS for the Forest Plan EIS. There is significant new information on listed species which requires a supplementation of the Plan EIS. The Plan EIS needs to be supplemented to address the listed species.
Response	NFMA and Forest Service manual and handbook provide direction for changes to Forest Plans. We have determined that the changes proposed are not significant and that an amendment is appropriate (pp. 2-3)
Commentor(s)	2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 17, 18, 20, 21, 22, 23, 24, 25, 26, 29, 30, 31, 33, 35, 36, 37, 39, 40, 41, 43, 44, 45, 46, 48, 49, 51, 54,
Comment 116	Extend the comment period to allow adequate time to respond since several projects are now out for review.
Response	Various stages of this EIS have been available to the public since February 1999. The public was given a chance to provide issues, via comments, during a 30-day scoping period early in that year. The draft EIS was again made available for comments, as per NEPA regulations, in early 2000. This comment period lasted for 45 days. Since scoping began and up until just before the Final was made available we received many requests for background data and information that were fulfilled (see Chronology of Public Involvement in Appendix C). We received 76 comment letters and after evaluating and summarizing each, we identified over 180 substantive comments that cover almost every aspect of the analysis (see Appendix

F). We believe we received sufficient response during the comment period and that additional time was unwarranted.

Commentor(s)	17, 18, 20, 24, 25, 26, 30, 33, 35, 36, 37, 39, 41, 42, 44, 54, 55, 64
Comment 117	Please hold public meetings on the proposed plan amendment.
Response	The ID team mailed over 350 letters to interested publics at the beginning of this analysis. We received 11 replies, none of which requested a public meeting. After our review of the information received during scoping, and the subsequent analysis, we did not feel we would receive any new information at a public meeting that would add significant information for our analysis. The fact that this is not a significant plan amendment also reinforced our decision to not hold a public meeting. We did receive requests for public meetings during the 30-day comment period on the DEIS. Since the information gathered during this comment period is concerned mainly with critiques of the draft document, we did not feel that a public meeting was the appropriate forum to receive meaningful input for needed changes to the document. We feel that written comments provide much more useful information for adjustments that are needed between the draft and final document.
Commentor(s)	12
Comment 118	Who is the tree biologist who worked on this EIS?
Response	See the list of preparers, FEIS, Chapter 6.
Commentor(s)	21, 22, 23
Comment 119	The Forest Plan amendment should be considered a significant amendment. Please document your decision to make the amendment non-significant. Your decision here should be appealable. Your decision to make the amendment non-significant is arbitrary and capricious.
Response	The DEIS, chapter 1, has been revised to more clearly explain why this amendment is considered a non-significant amendment (pp. 2-3).
ROADS, RECREATION , SOCIAL, AND ECONOMICS	
Commentor(s)	12
Comment 120	44. (per page vii par. 5) Please provide reviewed research to show road building is minor (sic). Do not forget you are planting non-native grass in this once fertile forest, changing water patterns and breaking connections of the trees in the area and fragmenting. Which research claims this is minor? Or is this just another one of those feelings you claim you get? Please provide data on the latter.
Response	The Physical Characteristics section of Chapter 4 (pp. 72-74) describes the effects of the proposed S&G changes on roads (management and construction) while the T&E BA (12/98) provides discussion of how roads, as proposed in the current Forest Plan, affects the T&E species (T&E BA(12/98) pp. 36; 48-54; 67).
Commentor(s)	59
Comment 121	Page 79-80. Since when were National Recreation Areas to be managed as "road less"? Is this another attempt at de-facto Wilderness? My personal knowledge is that there are/were roads in your NRA land, formerly belonging to Texas Gulf Sulphur Co. aka Texasgulf, etc. on the west side of the Reservoir.
Response	The proposed amendment does not address access to NRAs. The Allegheny NRA is being managed as roadless as discussed in the Forest Plan pages 4-149 and 4-150. You are correct in that there are existing roads, most of which are closed. The Forest Plan does not affect privately built and maintained roads. The only Forest Service access to the NRA is to the developed recreation sites such as Tracy Ridge.
Commentor(s)	50

Comment 122	I would also like to know what "value of timber sales" means. Is that actual cash that the forest service gets to use to help manage the land? \$21 million annually seems pretty skimpy considering that a 100-year-old black cherry can fetch better than \$10,000 by itself.
Response	Total value of timber sales is the gross receipts received for timber sold. It does not reflect the cost of sale preparation nor the dollar value available for management.
Commentor(s)	21, 22, 23
Comment 123	The economic analysis should acknowledge that while money goes into the Allegheny National Forest timber program from the General Treasury, none or little of it is returned to the General Treasury. This equates to a loss to taxpayers equal to that budgeted from the General Treasury. The analysis of the Draft EIS should consider taxpayer interests by calculating the cost to US Taxpayers of implementing each alternative.
Response	Economic analysis is found in the project file and the DEIS Chapter 4. In regards to returns to the treasury, as an example, in 1997, the ANF returned 25.0 million dollars to the treasury. Expenses for the timber program were 11.5 million, which included 25% payments to counties. The net return to the treasury was 13.5 million dollars (USDA-FS 1998b). This is representative of recent years. As shown, the ANF timber program returns to the treasury are very large and far exceed the associated costs.
Commentor(s)	21, 22, 23
Comment 124	1. The economic analysis for the Draft EIS is lacking in many areas. For example, modern economists have estimated that natural forests provide \$4.7 trillion every year in "ecosystem services." (Costanza 1997) Ecosystem services include flood control, regulation of agricultural and forest pathogens, mitigation of wildfire (this is especially true of the moist native Allegheny forests), pollination, and carbon sequestering. (Moskowitz 1998: 1) These "ecosystem services" must be incorporated into the analysis.
Response	The information related to ecosystem services is directed at the scope of a Forest Plan Revision and evaluating tradeoffs of Forest management alternatives. The scope of this decision (EIS Chapter 1) and subsequent economic analysis (EIS Chapter 4) does not analyze the economic effects of a variety of Forest Plan alternatives but at the economic changes of incorporating alternative sets of standards and guides into the current Forest Plan direction. The economic analysis in the EIS was based on and being compared to the type of economic analysis completed in the current Forest Plan and at a level of detail appropriate for the decision being made. Also, the proposed action does not have any potential effects on flood control, regulation of agriculture, forest pathogens, mitigation of wildfire, pollination, or carbon sequestering and were therefore not included in the Chapter 4 discussion on effects. No information was brought out during analysis or scoping that related these items to the proposed action.
Commentor(s)	21, 22, 23
Comment 125	The benefits and costs of the alternatives, and their various parts, on the recreation and tourism aspects of our regional economy must be analyzed in detail.
Response	Economic analysis was completed and is found in the EIS Chapter 4 - Social/Economic Characteristics, subsection "Economics" (pp. 89-91).
Commentor(s)	21, 22, 23
Comment 126	The economic analysis for the Draft EIS must consider impacts to the revenue received by private land holders for their timber.
Response	Chapter 4 (p. 90)discusses the effects on timber harvest and values. It is expected that any effect of implementing new S&G's on timber harvest and values would be small; so it is unlikely that there would be any direct effect on revenues received by private landholders.

Commentor(s)	59	
Comment 127		Please apply your "multiplier coefficients" to timber harvests as was done for recreation.
Response		We anticipate some difference in individual sale values as a result of S&G's that require leaving live trees in salvage harvest units, however we are uncertain as to exact impact (p. 90). We will monitor salvage harvest values to determine what an appropriate multiplier coefficient would be. We expect that impacts to timber values will be small at the programmatic level.
Commentor(s)	60	
Comment 128		The DEIS also fails to evaluate the social and economic effects of requiring that boat operators/owners travel some distance to a decontamination facility, due to the failure to provide readily-available decontamination facilities at or near the marina and/or launches. This could pose a substantial increase in the risk of zebra mussel introduction, since boaters are likely to either not take the initiative to decontaminate vessels, or use a non-Forest Service launch with no decontamination facilities.
Response		Analysis for the Zebra Mussel Action Plan was completed in response to the Reasonable and Prudent Alternatives (RPA) outlined in the June 1999 BO. This analysis included a social and economic review of each RPA. The Zebra Mussel Action Plan summarizes this analysis and was made part of the ANF Conservation Program. See Appendix A of the EIS.

VEGETATION AND HERBICIDES

Commentor(s)	12	
Comment 129		155. (Table 6 Page 24#9) Is the SHIGOMETER being used to determine "vitality".
Response		No. A shigometer, which is a tool to detect wood decay in a tree, would not provide any meaningful information for this analysis. The purpose of this analysis is to: 1) identify how new information and requirements pertaining to the four T&E species contained within the USDI Fish and Wildlife Service Biological Opinion (BO), and the five species contained within the Conservation Program for T&E Species on the Allegheny National Forest (ANF CP) (Appendix A) affects the implementation of the Forest Plan; and 2) identify what changes are needed in current Forest Plan standards and guidelines and monitoring requirements.
Commentor(s)	64	
Comment 130		Inform the Forest Service of their failure to complete a detailed analysis of the uneven-aged selection cutting alternative is a violation of the National Forest Management Act (NFMA) which requires that they de-emphasize even-aged cutting methods (those practices that end in clear cutting).
Response		The rationale for the elimination of an uneven-aged management alternative from detailed consideration was rewritten for clarification. See Chapter 1 (pp. 3-4) and Chapter 2 (pp. 34; 42-43).
Commentor(s)	21,22,23	
Comment 131		The EIS does not discuss the level of harvest and impact of logging on TES species.
Response		The impacts of logging are not part of the purpose and need. Logging and levels of harvest were discussed in the T&E BA (12/98) on pages 31-42; 50; 58; and 66-69. The purpose of this analysis is to: 1) identify how new information and requirements pertaining to the four T&E species contained within the USDI Fish and Wildlife Service Biological Opinion, and the five species contained within the Conservation Program for T&E Species on the Allegheny National Forest affects the implementation of the Forest Plan; and 2) identify what changes are needed in current Forest Plan S&G's and monitoring requirements.

Commentor(s)	12
Comment 132	<p>131. (page 12 foraging habitat) "Road ruts collect drinking water" During heavy rain does not road ruts collect herbicides and ammonium nitrate from your treatments which consist of applying ammonium nitrate, herbiciding (with unsafe chemicals) (with helicopters)...</p> <p>And is it not true where soils are deficient in carbon high amounts of nitrates are found in streams and ground water?</p>
Response	<p>Spraying operations shall not occur when rain is anticipated within 4 hours at the treatment site (USDA-FS 1991, p. 5-3). The sprayed material generally has ample time to dry on vegetation, litter, or soil particles on the site making it far less likely for any thing but very minute amounts to go into solution in ruts should rainfall occur (USDA-FS 1991, pp. 4-4 and 4-5). Glyphosate is adsorbed to soil particles. Both are rapidly degraded by soil microbial activity. Sulfometuron methyl is broken down by water hydrolysis and sunlight (photolysis) (USDA-FS 1991, pp. 2-6 and 2-7). In the unlikely event that an Indiana bat drank water containing either of these herbicides, no adverse effects are likely since both herbicides are only slightly toxic to mammals and exposures would be minute (USDA-FS 1991, Appendix C). The environmental effects of aerial fertilization are described on pages 4-41, 4-42, and 4-129 of the Forest Plan Environmental Impact Statement (USDA-FS 1986). The findings were that the potential negative effects from this practice were mitigated or insignificant.</p>
Commentor(s)	12
Comment 133	148. (Table 6 Page 23#7) Does this mean applying ammonium nitrate, herbiciding (with unsafe chemicals)--killing above and below ground companion... will not be permitted?
Response	<p>Fertilizing and herbicide treatments are not automatically prohibited within .25 mile of a bald eagle roosting site (p.37, Table 8, #1.d.). However, each activity will be evaluated on a case-by-case basis to determine what restrictions are necessary. Activities that may result in the incidental take of roosting eagles or degradation of roosting habitat may include road and trail construction and maintenance, timber cutting and hauling, oil and gas development, and rights-of-way management.</p>
Commentor(s)	12
Comment 134	177. (Table 6 Page 24#12) "After discussion with FWS" Did FWS prescribe removal of carbon based cellulose as well as the future supply of calcium or did they claim some openings were needed? From my understanding they asked you to create an opening but not to remove anything. You continue to use the FWS as an excuse for your supporting authority mandating applying ammonium nitrate, herbiciding (with unsafe chemicals)...
Response	<p>The BO issued by the U.S. Fish and Wildlife Service addresses whether continued implementation of the Forest Plan on the ANF is likely or not likely to jeopardize the continued existence of these species. It is the Forest Plan, promulgated by the Forest Service, that directs the activities that are being proposed on the Allegheny National Forest. The BO provided reasonable and prudent alternatives and terms and conditions, and provided for incidental take with associated actions to minimize take, that when applied to the activities proposed under the current Forest Plan result in a no jeopardy opinion.</p>
Commentor(s)	21, 22, 23
Comment 135	6. A 1988 paper found that the application of glyphosate causes major reductions in the populations of various insects (greater than 50% reductions for some populations). Various other reports show reductions in populations of woodlice and other beneficial species. This analysis must consider these impacts. (Cox 1998: 11)
Response	<p>The information you provided in your comment does not present any new information beyond that already considered which would prompt the need for additional analysis, review, or changes to impacts already discussed.</p> <p>The 1988 study you referenced (Hassan et al 1988) from Cox 1998 (p. 11) is the same study referenced in Cox 1995 (p. 16). The Cox 1995 article, including the papers you have indirectly referenced in the subsections on page 16 of the Cox paper titled "Beneficial insects", "Other insects", and "Other</p>

"arthropods", were evaluated in detail as part of the analysis conducted for the ANF EIS for Vegetation Management on Electric Utility Rights-of-Way (USDA-FS 1997b, Appendix G, p. 50 "Terrestrial Insects"). The discussion related to these topics is essentially identical in both the 1995 and the 1998 papers. That evaluation indicated the Cox articles provided no new information not already considered, and in many cases the Cox discussions of the results of the studies were either incomplete or misleading.

Glyphosate is considered practically non-toxic to insects (USDA-FS 1991, Chapter 4, p. 16 and Appendix C. This low order of toxicity is affirmed in SERA et al 1996 (pp. 4-1 to 4-3 and 4-15 to 4-18) and in USDA-FS 1997b (Appendix C, pp. 1 and 4).

Commentor(s)	21, 22, 23
Comment 136	7. According to Cox, glyphosate has been found to be acutely toxic to fish (many Allegheny PETS species are fish as are many state threatened and endangered species). The Draft EIS must consider this new information. (1998: 12.
Response	<p>The information you provided in your comment does not present any new information beyond that already considered which would prompt the need for additional analysis, review, or changes to impacts already discussed.</p> <p>The acute toxicity of glyphosate (formulated as Roundup) to fish is discussed in USDA-FS 1991 (Appendix C, p. 2). The potential for adverse effects on fish depends on exposure, and buffer strips limit this exposure. The overall risk to fish is negligible from typical or maximum exposures, but significant adverse acute effects could occur from an accidental spill or direct application of glyphosate into a pond (USDA-FS 1991, Chapter 4, pp. 16-17, Appendix C, p. 1 & 8). USDA-FS 1997b (Appendix C, pp. 20 -21), based on the latest information available, affirms the negligible risk of acute effects on fish from glyphosate, as does analysis documented by SERA et al (1996, Chapter 4, p. 28). Keep in mind that the glyphosate formulation currently used on the ANF is Accord.</p> <p>The Cox 1998 paper (p. 12) you referenced is almost identical to the Cox 1995 (p. 17) discussion on the acute toxicity of glyphosate to fish. The Cox 1995 articles, including the papers referenced therein, were evaluated in detail as part of the analysis conducted for the ANF EIS for Vegetation Management on Electric Utility Rights-of-Way (USDA-FS 1997b, Appendix G, pp 53 & 54 "Fish"). That review indicated the Cox articles provided no new information not already considered, and in many cases the Cox discussions of the results of the studies were either incomplete or misleading. The articles quoted actually show that normal operations will not result in unacceptable adverse effects to fish. Water quality monitoring has shown ANF buffer strips to be effective at limiting herbicide movement into stream (USDA-FS 1991, Chapter 4, p. 18).</p>
Commentor(s)	21, 22, 23

Comment 137	10. According to research conducted by the Forest Service the application of herbicide increases the composition of interfering vegetation. This is contradictory to the stated purpose of herbicide application as part(t) of the direction given in the Forest Plan (Horsley)
Response	<p>This phenomenon is one of the main reasons ANF personnel conducted the analysis documented in the ANF EIS for Understory Vegetation Management... to evaluate methods for achieving more complete control of grasses and ferns (ANF, 1991; pp. 1-1 to 1-4 and 4-13 to 4-14 and ROD-1). Achieving more effective control of both ferns and grasses was one reason the decision maker chose Alternative 2, which permits ANF personnel to consider using sulfometuron methyl when conditions are appropriate (USDA-FS 1991; ROD-3 and ROD-5 and ROD-7).</p>

The reference you cited was based on the first semi-commercial applications of glyphosate on the Allegheny Plateau in 1979. Glyphosate was sprayed from a crawler tractor-mounted sprayer that had a swath width of about 35 feet. As explained in the published report (p. 112), "fern... regrowth was caused by the additional light from the shelterwood cut and an artifact of the application method. The metal cleats on the tracks of the crawler tractor pinched off small segments of the fern rhizome so that Roundup could not be translocated into them." Grass and sedge also increased on herbicide-treated areas after a subsequent shelterwood seed cut. Changes in the equipment used to move the sprayer through the woods and the addition of sulfometuron methyl to the herbicide prescription where ferns and grass are being treated have

eliminated these problems.

Commentor(s)	21, 22, 23
Comment 138	5. A 1992 paper found that the application of glyphosate causes major reductions in the abundance of earthworms (more than 50% in even small applications). This needs to be considered in the Draft EIS. (Cox 1998: 11) Earthworms perform a vital ecological function by continually mixing and aerating soils vital to a healthy forested ecosystem.
Response	<p>We again affirm the World Health Organization Environmental Health Criteria 159 conclusion that states, "Glyphosate has low toxicity for bees and earthworms" (USDA-FS 1997a, Appendix G, p. 54). The information you provided in your comment does not present any new information beyond that already considered which would prompt the need for additional analysis, review, or changes to impacts already discussed.</p> <p>The Springett et al (1992) study you referenced from Cox 1998 (p 11) is the same study referenced in Cox 1995 (p. 18). The Cox 1995 article was evaluated in detail as part of the analysis conducted for the ANF EIS for Vegetation Management on Electric Utility Rights-of-Way (USDA-FS 1997b, Appendix G, p 54). The Springett et al (1992) study was also evaluated in SERA et al (1996, p 4-3). The project file contains other recent additional information (Monsanto 1997), indicating the low toxicity of glyphosate to earthworms.</p>
Commentor(s)	21, 22, 23
Comment 139	1. The Forest service completed an EIS for the use of herbicides Roundup (glyphosate) and Oust (sulfometuron methyl) on the Allegheny in 1991. That EIS was prepared without the knowledge that the Indiana Bat and Northern Long Eared Bat were using the Allegheny. Furthermore, a wealth of new information has come to light concerning these herbicides. A recent paper covering the impact of glyphosate cites 183 sources, 115 of which were published after that EIS for the Allegheny (see Cox 1998). In addition to the new analysis on the impacts of timber cutting the Forest Service must conduct analysis on the impacts of herbicides before proceeding with the proposed Amendment. This analysis should be documented in a revised Draft EIS.
Response	<p>The Allegheny National Forest follows Forest Service national guidance for evaluating new credible scientific information submitted by the public (USDA-Forest Service WO March 1999). Commentors are asked to provide a detailed explanation of why selected studies would significantly change or alter any of the consequences that the Forest Service has disclosed or will disclose. The significance of new information and the rationale as to why the information is important must be explained for selected studies.</p> <p>Comments should also tie closely to the purpose and need for the project/program under review. In this instance, the US F&WS BO (US F&WS 1999) provided new information and requirements to the ANF regarding T&E species. In response, the purpose of this project is to determine what changes are needed in the Forest Plan standards and guidelines and monitoring requirements (ANF 2000, Chapter 1). Potential effects on the Indiana bat from using sulfometuron methyl and glyphosate for understory vegetation control were evaluated by the US F&WS and documented in the US F&WS BO (1999, pp 10, 11, and 51) and considered to be insignificant. In this instance it is unclear how your comments relate to determining what changes are needed in the Forest Plan based on the BO since herbicide toxicity is not at issue. Nevertheless, we have elected to provide you comment responses commensurate with the general nature of your comments.</p> <p>The reference you provided dealt only with glyphosate, so for the most part the responses will focus only on that herbicide.</p> <p>The ANF FEIS for Vegetation Management on Electric Utility Rights-of-Way (USDA-FS 1997b) included an updated review of available literature covering the behavior and toxicology of glyphosate (USDA-FS 1997b, pp. A-15 to A-22, A-53 to A-57, A-59, and A-65). That review did not result in any substantive changes to the toxicology discussion for glyphosate documented in the ANF FEIS for Understory Vegetation Management (USDA-FS 1991, Appendix A pp 3-7 to 3-14).</p> <p>Since 1991, the USDA has completed an updated literature review and risk analysis for both glyphosate (SERA et al 1996) and sulfometuron methyl (SERA et al 1998). These documents include both a human</p>

health risk assessment and an ecological risk assessment. The reference section of each contains a partial list of documents reviewed. USDA-Forest Service Washington Office (March 1999) describes the process SERA follows for reviewing the literature available when they undertake a new risk assessment.

The Cox 1998 paper you cited is essentially the same [with a few additions and deletions (Dost 1999, p. 1) as the Cox 1995 and 1995a publications evaluated previously (USDA-FS 1997b). A detailed response to a number of the statements made in those articles can be found in Appendix G, pages 48 through 60 and in the project file (Dost 1999; Dost 1997).

Many of the 115 potentially "new" citations you mentioned are listed in the bibliography of the Risk Assessment for Glyphosate (SERA 1996), indicating they were considered in that analysis. A number have been reviewed in USDA-FS 1997b (Appendix G, pp. 48-60).

Commentor(s) 21, 22, 23

Comment 140 4. An updated version of the 1987 thesis by D.J. Santillo that was cited in the Understory Vegetation Management EIS found that the application of Glyphosate was harmful to the abundance of invertebrates and the number of mammals (Cox 1998:11). This is extremely important because the State of Pennsylvania DCNR classifies invertebrates as important species that are generally at risk. The Allegheny includes many PETS invertebrates. The Draft EIS analysis must consider this information.

8. Two Maine studies have found that Roundup can harm the survival rates of small mammals including shrews and voles (note that the water shrew is a Sensitive species that was arbitrarily dismissed from consideration within this EIS!). Additionally, studies in British Columbia found that both deer mice and chipmunk populations decline after Roundup applications. (Cox 199:12)

Response The information you cited is well within the range of information already considered in the ANF FEIS for Understory Vegetation Management (USDA-FS 1991). It does not prompt the need to change any of the conclusions reached therein, nor does it prompt a need for additional detailed analysis in this EIS.

Analysis documented in USDA-FS 1991 indicates there are no significant toxicity risks to wildlife species or insects from the planned use of glyphosate on the ANF (USDA-FS 1991, Chapter 4 p 16 and Appendix C pp 1, 3, 7, and 8). Updated glyphosate toxicity information and updated information regarding its effects on wildlife habitat in the ANF FEIS for Vegetation Management on Electric Utility Rights-of-Way (USDA-FS 1997b, Appendix C pp 3 and 4) supports this earlier conclusion.

Glyphosate affects animals (and invertebrates) primarily by altering their habitat. As habitat changes, so does the variety and abundance of wildlife species. Research on the effects of herbicides on small mammal habitats and the associated changes in wildlife species composition has reported mixed results most likely because of the variety of habitats within and treatment methods for the areas treated (USDA-FS 1991, Chapter 4, pp. 16-17). The results of additional studies were summarized and reported in the Final EIS for Vegetation Management on Electric Utility Rights-of-Way (USDA-FS 1997a, Chapter 4, p. 110) and include some of the studies you referenced.

Commentor(s) 21, 22,23

Comment 141 3. A 1993 report from the United States Environmental Protection Agency (EPA) found that glyphosate (Roundup) persists in the soils of Pennsylvania for 128 days- period much longer than previously thought in the Allegheny's Understory Vegetation Management EIS. This new information must be incorporated into any new environmental analysis, including this Draft EIS.

Response The information you provided in your comment does not present any new information beyond that already considered which would prompt the need for additional analysis, review, or changes to impacts discussed.

USDA-FS 1991 indicates that the estimated half-life of glyphosate is less than 60 days for the ANF forest soil conditions (USDA-FS 1991, Chapter 2, p 7 and Chapter 4, pp 1 and 2). Though not specifically cited in your comment, we believe the 1993 U.S. EPA document you mentioned is the one cited by Cox (1998, p. 10) in Figure 6 of her article. The source of the data in Figure 6 (the EPA document referenced thereon) is a glyphosate terrestrial field dissipation study conducted by applying Roundup herbicide as a broadcast

application at the maximum use rate (10.7 lb a.i./acre) to eight separate bare ground test plots, one in each of eight representative states across the United States. Contrary to the display in Figure 6, none of the eight sites were in Pennsylvania. These sites were chosen because they represented a wide range of climatological conditions, soil types, and geographic conditions under which glyphosate would be used under normal agricultural practices. They were not selected to represent typical forest conditions, including those found on the ANF. One site located in Ontario County, New York, reflected a glyphosate half-life of 128 days. It is interesting to note that the test site in Ohio reflected a glyphosate half-life of 8 days. (Adams 2000, personal communication) It would be difficult to extrapolate this information to forest conditions.

The predominant route by which glyphosate is metabolized in the environment is through the activity of soil microflora (Franz et al 1997, pp. 72 and 73 and USDA-FS 1991, Chapter 2, p. 6 and Chapter 4, p. 2). Soil microbiological activity can differ widely between forest soils and agricultural soils. The results of other studies (Franz et al 1997, pp. 78 and 125) indicate glyphosate soil half-lives in forest soils ranging from 3 days to 200 days, with the majority of half-lives well below 70 days. Please note that USDA-FS 1997b Appendix A, p. 19, is a document completed more recently, and that it affirms the half-life of 30 days in soils found on the ANF.

Commentor(s)	1, 12, 49, 52, 60
Comment 142	How safe is herbicide use?
Response	The safety of herbicide treatments on the ANF is analyzed in the Understory Vegetation Management FEIS (USDA-FS 1991). Potential herbicide effects on human health are analyzed in a risk assessment in Appendix A of the ANF FEIS for Understory Vegetation Management. The Margin of Safety comparisons show that planned use of glyphosate and sulfometuron methyl should not affect any member of the public, including individuals who are sensitive to herbicides. The Wildlife and Aquatic Risk Assessment (USDA-FS 1991, Appendix C) shows that there is no significant risk to wildlife or aquatic species exposed to either herbicide.

WILDLIFE AND T&E

Commentor(s)	18, 20, 24, 30, 59, 62
Comment 143	Analyze the effects of logging on the T&E species.
Response	The effects of logging on T&E species was discussed in the T&E BA (12/98) on pages 31-42, 50, 58, and 66-69. The purpose of this analysis is to: 1) identify how new information and requirements pertaining to the four T&E species contained within the USDI Fish and Wildlife Service Biological Opinion, and the five species contained within the Conservation Program for T&E Species on the Allegheny National Forest affects the implementation of the Forest Plan; and 2) identify what changes are needed in current Forest Plan S&G's and monitoring requirements. The discussion of the impacts of logging is not part of the purpose and need.
Commentor(s)	60
Comment 144	Management Indicator Species (p. 51) The DEIS mentions that "Thirteen wildlife and three fish species representing a variety of habitats were selected to monitor trends in habitat capability." However, among those animals, none are amphibians. In fact, consideration of amphibians, throughout the report, is lacking. Given the relative pristine nature of the Allegheny National Forest, amphibians, or lack of them, would provide a useful indication of the health of that forest.
Response	The current list of Management Indicator Species (MIS) was developed to monitor trends in habitat capability for each species as well as other associated species, including amphibians, that require similar habitat (Forest Plan FEIS, p. 3-22). For example, the timber rattlesnake is the MIS for species (including amphibians) associated with large boulders, the American woodcock and beaver are the MIS's for species, including amphibians, associated with early successional forests near riparian areas. Several monitoring techniques for amphibians have been employed on the ANF including cover boards, pitfall traps, and random searches. Currently, ANF biologists are involved in the statewide effort to monitor frogs and toads by listening for their night calls. Monitoring has not provided evidence of any viability concerns associated with amphibians on the ANF (USDA-FS 2000).

Commentor(s)	12
Comment 145	215. (Table 6 Page 25#13) You say loose or exfoliating bark or cavities, blown down or decay.) Please explain and define decay. At this ecological stage, what benefits do you see that remain for the health of the system that you took into consideration? What unique benefits does this material have for endangered and threaten[ed] species if not removed?
Response	See Chapter 8 - Glossary for the definitions of key words used and reference to sources for more common definitions. Benefits of this material is for shelter and food production . See EIS, Chapter 3, Appendix D, the T&E BA (12/98), and the BO.
Commentor(s)	12
Comment 146	15. (per page ii par. 4) "These changes will ensure that adequate protection is given [t]o T & E Species and their habitat." One question, what do you mean when you say habitat? 16. (per page ii par. 4) If they require trees, as part of their habitat, what part of the tree and processes is important?
Response	Habitat is defined in Chapter 8 - Glossary of the EIS. Specific habitat requirements of each T&E species (including how each species utilizes trees) are presented in the T&E BA (12/98) (pp. 15-28, 42-44, 62-64, 71-73).
Commentor(s)	12
Comment 147	82. (per page 3 par. 3) ESA If the E & T Species need certain trees, these[s] trees are connected underground with other plants as well as microorganisms and require these connections for high quality life. They are enhanced by the ecological stages of trees about them and grass is very harmful for trees. Th[a]n how are you satisfying this law?
Response	See EIS Chapter 1 section on "Relationship to Other Laws and Regulations" (pp. 1-4). Section 7(a)(1) of the Endangered Species Act (ESA) requires Federal agencies to "carry out programs for the conservation of endangered and threatened species". Section 7(a)(2) requires Federal agencies to consult with the Fish and Wildlife Service to insure that "any actions authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any T&S species or result in the destruction or adverse modification of such habitat." The T&E BA (12/98), BO, and Conservation Program comply with these two section of the ESA (pp. 8-10).
Commentor(s)	12
Comment 148	124. (Page 11 summer roosting) Does not black cherry, when maturing produce similar phellem just as that of shagbark and would survive in areas at times where shagbark does not? Thus not removing black cherry trees being in the best interest of endangered species? How does removing black cherry help endangered species?
Response	The 1996 Draft of the Recovery Plan considered hickory as a Class 1 tree, which means it contains a high level of preferred bark characteristics for roosting. Black cherry was not classified but biologists on the ANF believe that it would likely be classified as a Class II tree. Removing trees to produce optimum canopy closures for foraging and roosting is beneficial to Indiana bats (BA pp. 31-40; T&E BA (12/98) pp. 31-40).
Commentor(s)	12
Comment 149	129. (page 12 foraging habitat) So then what (Romme et. Al. 1995) is saying is we should not be applying ammonium nitrate, herbiciding (with unsafe chemicals)...
Response	We disagree with this statement. Romme does not address the application of herbicide and fertilizer in his discussions.

Commentor(s)	21, 22, 23
Comment 150	Even if this explanation was accurate, the Forest Service would still have no reason for not addressing those species that have been on, the Sensitive species list.
Response	Potential impacts of each alternative to all sensitive species are addressed in the EIS, Appendix D. Efforts to gather data and complete conservation assessments for sensitive species is continuing.
Commentor(s)	21, 22, 23
Comment 151	This Draft EIS provides a unique opportunity to develop management plans for the Northern long-eared bat. Traditionally it has been thought that the Northern long-eared bat and the Indiana bat have similar habitat requirements. The Forest Service should make the Northern Long-eared bat a Management Indicator Species.
Response	Data gathering and analysis are continuing for the Northern long-eared bat. All habitat elements are not clearly understood at this time. Changes to MIS are outside the scope of this EIS.
Commentor(s)	21, 22, 23
Comment 152	Given the errors noted by MacGregor, and the increasing documented populations of Indiana bats in Pennsylvania, the assumptions made in the Biological Opinion regarding availability of potential roost are entirely unreliable. The Draft EIS needs to revisit this question in detail. And when it does, it has to consider that the Indiana bat is competing with other bats, birds, and mammals for the use of these trees. Based upon a comparison of species needs, availability of roost trees, annual and long-term disturbance regimes, and the existing populations for these species the Forest Service must analyze the actual impacts of take on the bat. This should be documented in a revised version of this Draft EIS and a determination should be made as to whether or not formal consultation is necessary.
Response	Chapter 4 of the FEIS analyzes the impacts of implementing new standards and guidelines for T&E species provided in the BO. Impacts of timber harvesting, road building, and other forest management activities are analyzed in the T&E BA (12/98) and BO. " ...The annual removal or disturbance of up to 13,984 acres per year would still provide 55,936 potential roost tree, if we assume that only some of the 5 nags and 3 den trees per acre provide suitable roosting conditions. If we assume that most or all of Pennsylvania's estimated hibernating population of 400 bats occurs on the ANF at some time during spring-fall period ...a minimum of 140 potential roost trees per bat per year would be provided in the areas where habitat alterations occur. Within a five-year period, ...the disturbance of 45,594 acres would still leave 182,376 potential roost trees available to the species (BO, pp. 66-67).
	The Draft Indiana Bat Recovery Plan has been developed by the top Indiana bat experts in the nation and represents the consensus of these experts on the biology and habitat of the Indiana bat. The Forest Service relies heavily on the experts on the Recovery Team to provide the best scientific information and recommendations possible for conservation and recovery of the species.
Commentor(s)	21, 22, 23
Comment 153	O. Creeping snowberry (<i>Gaultheria hispida</i>) 1. The Draft EIS fails to adequately assess the impacts to the Creeping snowberry, a state threatened species recently added to the Allegheny's Sensitive Species List. The only analysis given this species is the Conclusionary determination that "Maintaining the integrity of riparian areas along streams and ensuring water quality remains high would benefit Northern water shrews, Wiegand's sedge, Creeping snowberry, Thread rush , and Rough cotton grass." (U.S. Forst Service, 2000: D-20) The Forest Service does not even address whether or not Forest Plan direction would maintain the integrity of riparian areas. (The author of this comment included similar comments on all of the Regional Forester sensitive species as well as several other non-federally listed species. The following response applies to all of these comments as it relates to the T&E Amendment.)
Response	The commenter lists 5 Threatened and Endangered Species and 26 Regionally Sensitive Species and provides rationale as to why he feels these species need to be considered in the DEIS. He also feels that the analysis presently provided in the BA is inadequate and/or incorrect, that the amount of survey work

completed is inadequate, and that not enough information is available to accurately determine effects.

All Threatened, Endangered and Regionally Sensitive species were evaluated in the BA (Appendix D) of the FEIS. Information and analysis presented in Appendix D utilizes the most current and applicable information available on the 31 species included on the ANF PETS species list. It also incorporates on-Forest survey work (BA, pp. 3-4, 8-12) in its identification of suitable habitat (BA, pp. 1-12) and in its evaluation of effects (BA, pp. 19-25). Based on the analysis provided in the BA, there are no adverse effects to any threatened or endangered species that were not considered in the BO, nor are there any effects to any Sensitive species that would cause a trend toward federal listing (BA, pp. 33-34).

The commenter also identifies a number of non-federally listed species not included on the ANF PETS species list which he feels need to be considered due to state rankings, or vulnerability to potential impacts. Since the amendment only addresses new information related to threatened and endangered species, these species are not addressed in the Amendment FEIS. However implementation of existing Forest Plan standards and guidelines will ensure habitat for these species is maintained across the Forest. Uncommon species considered most vulnerable to management activities, as well as those species most likely to be affected due to the availability of suitable habitat and/or documented occurrence, were included on the ANF PETS species list. Effects to these species are addressed in Appendix D of the FEIS.

For a species to be included on the ANF PETS species list, it must meet specific criteria that lead to a determination of its vulnerability. The Forest Service works with the State Natural Heritage Program to develop a comprehensive Regional Forester Sensitive Species list and to complete risk assessments for vulnerable species.

Commentor(s) 21, 22, 23

Comment 154 B. American Burying Beetle (*Nicrophorus Americans*)

1. The Forest Service has conducted NO surveys within the Allegheny National Forest for the American burying beetle (Surveys are required by the ESA, the NFMA, and the Allegheny National Forest Plan on page 4-37.) The Forest Service arbitrarily and capriciously excludes the American burying beetle from consideration within the BE.... The Forest Service must then amend the Forest Plan to include provisions to provide for the adequate protection and recovery of the American burying beetle. (The commenter similarly identifies 2 other federally listed species including the eastern cougar and Canada lynx, which he feels needs to be considered.)

Response Due to the lack of recent historical occurrence in PA, lack of historical occurrence on the ANF and in consultation with the FWS (T& E BA 12/98, Appendix C), these species were dropped from the Forests PETS species list and as a result were not evaluated in the FEIS.

Surveys for the American Burying Beetle were conducted on the ANF and elsewhere in PA by the western Pennsylvania Conservancy and funded by FWS. No American Burying Beetles were found. No conclusive documentation that a viable population of eastern cougars exists in PA or on the ANF. A recent Forest Service-wide analysis of the Canada lynx determined that the ANF is not suitable habitat (lack of abundant snowshoe hares and no interchange with Canadian populations).

Commentor(s) 21, 22, 23

Comment 155 In her thesis, "Feeding Ecology of an Indiana bat community with emphasis on the endangered Indiana bat, *Myotis sodalis*," Jacqueline Janine Belwood characterized the importance of early findings regarding summer habitat: (see p. 114 of letter for cited text).

Taking Ms. Belwood's words to heart, one can easily measure the importance of summer habitat for the conservation of the Indiana bat. It is our goal and our mission to support the continued existence of the Indiana bat which must rely upon the preservation of as much of its habitat as is possible. This requires that we accurately assess the habitat being used by *Myotis sodalis*, that we protect this habitat, and that we take strident measures to recover this species throughout all of its range.

This process isn't supposed to be simply a matter of implementing the Terms and Conditions of the June 1999 Biological Opinion issued by the U.S. Fish and Wildlife Service. It does appear, however, that the Forest Service, has, in fact, narrowed the scope of this EIS to that Opinion. This is unfortunate.

The Forest Service's obligations to conserve and recover Threatened and Endangered species falls under several statutes. The ESA requires that the Forest Service 1) avoid jeopardizing the survival of the Indiana bat within part or all of its range, 2) avoid "Take" of Indiana bats wherever possible, and 3) take a lead role in the conservation (and recovery) of the Indiana bats.

Response	Chapter 1, Relationship to Other Laws and Regulations has been expanded to include a more complete discussion of the applicability of Federal laws (ESA, NFMA and NEPA) (pp. 1-4). This section includes more detail on the rationale for the scope of this analysis.
Commentor(s)	21, 22, 23
Comment 156	In February of 2000 the Pennsylvania Game Commission discovered a new hibernacula of hibernating Indiana bats along the border of Armstrong and Butler Counties. In addition, this hibernacula also lies much closer to the Allegheny than does the Canoe Creek Mine. This is significant new information that needs to be assessed before approving any new or older projects! There needs to be an analysis that incorporates these new findings.
Response	The discovery of a hibernaculum on land outside the ANF boundary does not change our analysis. The EIS was prepared and analysis completed with the acknowledgement that the Indiana bat and its habitat was present on the ANF. The S&G's were developed to protect the bat and its habitat. The discovery of a hibernaculum does not change this premise.
Commentor(s)	21, 22, 23
Comment 157	State law includes provisions to reject (OGM) permits with the potential to impact Threatened and Endangered species. It is not unreasonable to require operators to apply prior to the survey season or to wait until the following year so that surveys can be conducted. The "take" of a pogonia is a violation of the ESA and supersedes any rights these operators have to access their minerals rights. Therefore, the Forest plan should be amended to include provisions to require surveys, under USFWS approved protocol, be conducted before permits are granted to access the sites.
Response	Oil and gas operations on 93 percent of the ANF are conducted on outstanding and reserved mineral rights (the mineral ownership is by a private party divorced from federal government control). While the ANF works closely with the private mineral owners to protect the environment, the Forest Service has no legal jurisdiction to regulate the operations of these private minerals. Therefore, it is meaningless to place restrictions in the Forest Plan. The Pennsylvania Department of Environmental Protection (DEP) has the statutory authority to regulate and issue permits to these mineral owners. The remaining minerals (7 percent) are owned by the Federal government. Most areas, such as the Wilderness area, are withdrawn from entry. Those areas that are not withdrawn are eligible for leasing. All leases are issued following the S&G's of the Forest Plan. There are no pending lease applications nor are any applications anticipated. Also see the T&E BA (12/98) page 56 for more discussion on oil and gas.
Commentor(s)	2122, 23
Comment 158	None of the three alternatives proposed in the Draft EIS are consistent with the Biological Opinion. All three alternatives allow logging levels that 1) exceed incidental take and 2) would result in effects not considered within the Biological Assessment or the Biological Opinion.
Response	Table 6 on page 67 of the BO as amended by letter from FWS (USDI-FWS 2000) displays the level of activity that may occur on the ANF between now and when the Forest Plan is revised. We monitor the amount of activity on a quarterly basis and provide this data to FWS to ensure that allowable levels of incidental take are not exceeded.
Commentor(s)	2122, 23
Comment 159	But the BO did not consider the temporary nature of shelter wood cuts and how they are actually likely to contribute to take of the bats. Nevertheless, there were strict requirements to retain potential roost trees following both shelter wood and removal cutting. These requirements are probably inadequate however due to post-cutting environmental

conditions that often result in high levels of residual tree mortality and wind throw. The Draft EIS for Threatened and Endangered species on the Allegheny documents this problem well. There is also a significant amount of mortality and damage that affects residual trees that results directly from the logging activity itself. There is also a concern that neither the Draft EIS nor BO considers how the size of cutting units might affect the effectiveness of the mitigation measures proposed.

These important aspects of the impacts of shelter wood cutting are ignored by the BO and the Draft EIS for Threatened and Endangered Species. These effects are also ignored within the Supplemental and Original EAs being conducted (allegedly to comply with the BO) - an important problem that needs to be addressed in new ???

Response	The retention of potential roost trees has been a concern throughout the process. Terms and conditions were developed in the BO to ensure that potential roost trees are maintained (BO p. 72) and their longevity monitored (BO p. 73). These terms and conditions have been incorporated into the FEIS (p. 38; Appendix A pp. 6-9).
Commentor(s)	21, 22, 23
Comment 160	In Appendix A - page 7c. It is stated "the documented presence of Indiana bats within a project area shall subject that project to further consultation with the FWS". I think that a time line is necessary for this statement. It will not help the bat associated with the project to consult with FWS after the project is completed.
Response	If an Indiana bat is captured or a maternity colony is discovered on the ANF, the FWS will be contacted immediately and consultation will proceed.
Commentor(s)	57
Comment 161	3. The modifications proposed for the Indiana bat need to be further qualified. The snags and live trees left in final harvest areas should be in clumps, not scattered throughout the cut area to lessen the likelihood of them blowing down, therefore no longer serving their purpose. Also, the trees selected should be based on their value. For example, do not include veneer quality cherry in a leave area as one of the greater than 20" diameter trees, but rather look for a poor quality cherry or a lower value species such as soft maple to satisfy this requirement.
Response	Leaving residual trees in clumps is already a part of the Forest Plan S&G's. See EIS Chapter 2, Table "Existing Forest Plan Standards and Guidelines" under Den trees.
Commentor(s)	60
Comment 162	Neither the clubshell nor the northern riffleshell are commercially valuable; therefore, although they could be taken during black market collecting of shells, they are not the target of collection so this threat is minimal.
Response	The FEIS, page 20 has been changed in regards to mussel black markets.
Commentor(s)	60
Comment 163	Add "roosting areas" under the "unit of measure" for the bald eagle.
Response	"Roosting Areas" has been added as a unit of measure for the bald eagle in Table 10 on page 40 of the FEIS.
Commentor(s)	60
Comment 164	This S&G reflects the intent of the biological opinion; however, <u>the first sentence of this S&G should read: "...marina and boat launches..."</u>
Response	We have corrected the error identified and changed "or" to "and" in the phrase "marina or boat launches" found in Table 6, on page 25 of the DEIS.

Commentor(s)	60
Comment 165	Roads - Bald Eagle (p. 61) With regard to bald eagles, the DEIS states that "if it becomes obvious that road use is adversely impacting the nesting birds, these S&G's could result in the need to either temporarily or permanently close an existing Forest Service road, or relocate an existing Forest Service road away from a nest (p. 61)."
	We believe it is the responsibility of the Forest Service, pursuant to Sections 7 and 9 of the Endangered Species Act, to monitor road use in the vicinity of eagle nests and consult with the FWS or take action to avoid impacts to nesting birds before adverse effects occur.
Response	The wording in the DEIS page 61 has been changed to require action before adverse harm occurs to the Bald eagle (FEIS p. 73).
Commentor(s)	60
Comment 166	The second paragraph (p. 69) indicates that some partial harvests may result in canopy closures which drop below the 50 percent minimum required in the biological opinion. It should be stated that in such instances, further consultation with the FWS will be required because this was not considered in the biological opinion.
Response	The DEIS has been rewritten to reflect the change. We will continue to consult with the FWS when canopy closures drop below 50% (pp. 80-81).
Commentor(s)	60eagle.
Comment 167	We recommend increasing the minimum number of super-canopy trees to be identified and maintained within one-quarter mile of each nest from three (as proposed) to ten.
Response	The revised Forest Plan S&G in Chapter 2 (p.37 Table 8, #2) calls for maintaining a minimum of three super-canopy trees within one-quarter mile of each nest as was recommended in the Northern States Bald Eagle Recovery Plan. Until such time as we have new research or a new standard recommended by the Recovery Team we plan to follow the current minimum standard of three.
Commentor(s)	60
Comment 168	"Abandoned nest trees" (items 2a and 2b; see also items 4 and 5 in Table 6). These items/S&G's should be deleted since they are both instances of "abandoned" eagle nests covered under "protection of individuals" (item 1).
Response	We agree that there is redundancy here and have eliminated items 2a and 2b from the Conservation Program since they are covered under "Protection of Individuals". We have removed items 4 and 5 from Table 6 in the DEIS.
Commentor(s)	60
Comment 169	Include a new target objective for the number of bald eagle nests on the Forest. The current objective of one nesting pair on the Forest by the year 2020 (p. 4-39 of Forest Plan; Table 11 of DEIS) has already been met. Eight nests is probably not unreasonable considering the availability of habitat and the expanding bald eagle population.
Response	The current Forest Plan direction and desired future conditions (particularly MA 6.1, 6.2, and 5) along with standards and guidelines for Bald eagles will provide suitable nesting habitat for a large population of Bald eagles. However, since Bald eagle populations are affected by many activities beyond those on the ANF, we prefer not to speculate on the number of nesting pairs that may inhabit the ANF by 2020. We do not plan to continue with population type standards and guidelines but focus on habitat and protection of individuals. Monitoring will track Bald eagle populations and the use of the habitat over time.

Commentor(s)	60
Comment 170	<p>At this time, it appears that the action plan may not comply with the spirit, letter, and intent of RPA 1, particularly in regard to the proposed location of decontamination facilities, and the level of dependence upon boat owners to conduct their own screening and decontamination. ... until such time as additional details regarding implementation of the action plan are provided, reviewed, and approved by the FWS, it is incumbent upon the Forest Service to temporarily or permanently close boating facilities on the Allegheny Reservoir and Allegheny River, consistent with RPA 2 or RPA 3 of the biological opinion. Permanent closure of facilities (RPA3) represents Alternative 2 in the DEIS.</p>
Response	<p>After extensive analysis and discussion, the FWS and Forest Service have developed a final Zebra Mussel Action Plan for implementation during the 2000 boating season. A copy of this action plan is included in Appendix A, Attachment A of the EIS.</p>
Commentor(s)	62
Comment 171	<p>Our April 6, 2000, comments on the first set of EAs enclosed a copy of a May 9, 1999, letter to John MacGregor on his Indiana bat monitoring. It should be considered for these sales. We also enclosed a copy of our comments on the draft recovery plan. While a large portion of the material is not relevant, it cites extensive research that contradicts the conclusions the Forest Service has reached. All of the research we cite needs to be considered. We also note that you have ignored the September 6, 1999 letter on Dr. Whitaker's comments. We include this letter</p>
Response	<p>The discussion of Indiana bat habitat and evaluation of effects included in the FEIS, is based upon information presented in the December 1998 BA for Threatened and Endangered Species on the ANF (pp. 15-42), and the June 1999 Biological Opinion on the Impacts of Forest Management and other activities to the Bald Eagle, Indiana bat, Clubshell and Northern Riffleshell on the ANF (USDI-FWS 1999b pp. 21-36). Information presented in both these documents is based on the Draft Indiana bat Recovery Plan, which has been developed by the top bat experts in the Nation and represents the consensus of these experts on the biology, habitat, and management of the Indiana bat.</p> <p>As described in the Recovery Plan, there may be variations in habitat preferences and use for the Indiana bat throughout its range. However the Forest relies heavily on the information presented in the Indiana bat Recovery Plan. In addition, information included in the FEIS is based upon three years of on-Forest monitoring for the Indiana bat and continued and on-going informal consultation with the USFWS. As a result, analysis and information presented in the FEIS is based on the most current and applicable information related to Indiana bat habitat and populations on the Allegheny National Forest.</p>
Commentor(s)	62
Comment 172	Likewise, the analysis needs to consider the issue of additional predators that the Indiana bat will be exposed to as a result of opening the canopy.
Response	<p>The DEIS analyzed the impacts of implementing new standards and guidelines for T&E species provided in the BO. Impacts of timber harvesting, road building, and other forest management activities are analyzed in the T&E BA (12/98) and BO. The Draft Indiana Bat Recovery Plan has been developed by the top Indiana bat experts in the Nation and represents the consensus of these experts on the biology and habitat of the Indiana bat. The Forest Service relies heavily on the experts on the Recovery Team to provide the best scientific information and recommendations possible for conservation and recovery of the species. The Recovery Plan states that Indiana bats "seem to prefer open canopies and fragmented landscapes (p. 9).</p>
Commentor(s)	62
Comment 173	Forest Plans do not "take" listed species, therefore the Incidental Take Statement is not valid. Even if it was, the Forest Service is required to give top priority to the protection of listed species. Killing endangered species is not giving top priority to the listed species.
Response	<p>The FWS responded to a similar comment from Jim Bensman in a letter dated December 10, 1998. In summary the FWS stated that: "...The value of conducting a section 7 consultation at the LRMP level is that it provides an opportunity to integrate the effects of a wide array of activities that are to occur under</p>

the umbrella of the Forest Plan rather than relying on a project-by-project assessment. This provides an opportunity to include standards and guidelines that when applied forest wide will have beneficial effects for listed species. Unfortunately, if we accept your approach that the Plan does not take species, then consultation on the Plan becomes largely a paper exercise because we will have to defer minimization or mitigation until site-specific reviews can be completed. We feel that such an approach provides less protection for the species than the comprehensive approach we are advocating. Furthermore, the FWS has been chastised by Federal Courts for failing to include incidental take statements in biological opinions for LRMP's that will adversely affect listed species."

Commentor(s)	62
Comment 174	The Forest Service also needs to consider the rulings in House v. United States Forest Service, 974 F.Supp. 1022 (E.D.Ky. 1997) and Bensman v. United States Forest Service, 984 F.Supp. 1242 (W.D.Mo. (1997)). These rulings specifically rejected all the Forest Service's standard claims about why the logging will not have any adverse effects on the Indiana bat and ruled that the timber sales in question will "take" the Indiana bat.
Response	These rulings were considered in the development of this EIS.
Commentor(s)	31, 59, 62
Comment 175	This analysis needs to consider all available research on the Indiana bat including their entire home range, their summer roosting, foraging, and maternity habitat for both males and females. The analysis must consider the impacts to potential roost trees and the potential stress to bats of removing trees.
Response	The DEIS analyzed the impacts of implementing new standards and guidelines for T&E species provided in the BO. Impacts of timber harvesting, road building, and other forest management activities are analyzed in the T&E BA (12/98) and BO. The Draft Indiana Bat Recovery Plan has been developed by the top Indiana bat experts in the Nation and represents the consensus of these experts on the biology and habitat of the Indiana bat. The Forest Service relies heavily on the experts on the Recovery Team to provide the best scientific information and recommendations possible for conservation and recovery of the species.
	The T&E BA (12/98) and the BO analyze the impacts of forest activities on T&E species including the effects on potential habitat. Potential impacts to sensitive species are addressed in the BA (Appendix D) of the EIS.
Commentor(s)	21, 22, 23
Comment 176	Impacts to PETS are not adequately addressed in the DEIS and BE. Several species which we feel should be on the sensitive species list, but are not, were not addressed in the analysis.
Response	Impacts to T&E species are covered in the T&EBA (12/98), BO, and the EIS, Chapter 4, and Appendix D. Only species that met the criteria for the Regional Foresters sensitive species list were analyzed in these documents.
Commentor(s)	21, 22, 23, 64
Comment 177	The scope of the EIS should be expanded to include the 17 new sensitive species. Failure to address these species is a violation of the NFMA.
Response	An alternative (Alternative 8) that proposes changes to the Forest Plan that addresses needs of sensitive species was considered but eliminated from detailed study (See Chapter 2 p. 45) Conservation Strategies and Assessments that would outline possible Forest Plan changes have not yet been completed, therefore this comment is premature. Any changes to the Forest Plan that might be needed to address the needs of sensitive species would be considered at a future date. We do not believe this is a connected action as defined in 40 CFR 1508.25 (1) as it does not trigger other actions before, during, or after the proposed action nor is it an interdependent part of a larger action and depend on that larger action for its justification.

Commentor(s)	12
Comment 178	60. (per page viii par. 5) What are the connections of a maternity roost tree? What are the connections requirements that must be protected to ensure the future desired goal of a healthy tree?
Response	<p>Maternity Roost trees are discussed in the T&E BA (12/98) in the section titled "Species Information" beginning on page 15 and in the DEIS, Chapter 3 and 4 in the Biological Characteristics sections under the heading "Forest Vegetation and Habitat for Threatened and Endangered Species" (pp. 53-56, 77-78). Specific habitat requirements of each T&E species (including how each species utilizes trees) are presented in the T&E BA (12/98) (pp. 15-28, 42-44, 62-64, 71-73).</p> <p>The Forest Plan addresses the relationships between various elements of the ecosystem and how these functioning systems may be impacted by forest management activities. Furthermore, the T&E BA (12/98) and BO analyze the potential impacts of forest management activities to T&E species as well as the relationships between these species and their forest environment. For example, the T&E BA (12/98) (p. 34) addresses the potential impacts of insecticides to the food supply of bats.</p>
Commentor(s)	12
Comment 179	84. (per page 3 par. 3) When has the ecological stages of trees, carbon based cellulose and water not been a part of the habitat for endangered or threatened species?
Response	<p>The habitat needs for each species is analyzed in detail in the Biological Assessment (BA) in the section titled "Species Information" beginning on page 15 and in the FEIS Chapter 1 section "T&E Species Background Information" (pp. 11-20). Furthermore, this section of the BA (also repeated in the Biological Opinion) analyzes the potential impacts of currently planned forest management activities to T&E species as well as the relationships between these species and their forest environment.</p>
Commentor(s)	12
Comment 180	234. You say that 0 Amphibians on page 50 table 20. What, amphibians are very much connected with large woody debris. See my references. You have not been looking. When you look when do you look? From 9-5? There is more to a forest than 9-5. Or do you look from in your office where the light is better and it is cooler in the summer.
Response	<p>A correction has been made to DEIS Table 20 to reflect 5 amphibians and 9 reptiles associated with Old Growth (FEIS p. 60). Amphibians and reptiles have been monitored on the ANF using pitfalls, cover boards, and random searches. ANF biologists are participating in the statewide amphibian monitoring effort that involves documenting night calls.</p>
Commentor(s)	60
Comment 181	In December of 1998, the FWS recommended that this new strategy be implemented during the 1999 field season. The strategy, however, has not yet been developed, and is, therefore, unlikely to be implemented during the 2000 field season. If the strategy is not developed in time for implementation during the 2001 field season, a return to project-by-project surveys during the mid-May to mid-June survey window will be necessary.
Response	<p>The wording in Appendix A (p. A-12) concerning a survey strategy has been changed to require a new strategy by the 2001 field season.</p>
Commentor(s)	60
Comment 182	Clubshell and northern riffleshell (pp. A8-A10)
	"Education and awareness." Add measures 1a and 1b from reasonable and prudent alternative 1 of the biological opinion, as follows:
	Educational materials (e.g., brochures) regarding the threats posed by zebra mussels, the means of zebra mussel transport, and procedures for decontaminating vessels shall be made available to persons using the marina and

boat launches on the Allegheny Reservoir and Allegheny River."

"Signs shall be posted at the marina and boat launches on the Allegheny Reservoir, and at the boat launch on the Allegheny River (at Buckaloons) prohibiting the launching of vessels that may be carrying zebra mussels, unless such vessels have been decontaminated."

Response **Measures 1a and 1b were excluded from the Conservation Program because they already were implemented and we intended to continue these efforts. These have been added to the Conservation Program, Appendix A, page A-11 and are included in our Zebra Mussel Action Plan.**

Commentor(s) 60

Comment 183 "Habitat protection and enhancement" (item 6; see also item 10 in Table 6). Delete "under these terms and conditions" and replace with a reference to the relevant item numbers in this section (e.g., 2,3 and 5).

Response **The DEIS, page A-5, item 6 and page 24 of the DEIS, item 10 have been rewritten to reference the Terms and Conditions (See p. 31 #9 and Appendix A, p. A-6).**

Commentor(s) 60

Comment 184 "Inventory, analysis and monitoring" (item 5f). Add a sentence stating that "(T)he amount of incidental take resulting from implemented activities shall be reported to the FWS quarterly."

Response **The DEIS, page A-7, item 5f, has been changed to reflect quarterly reporting (FEIS p. A-9).**

Commentor(s) 60

Comment 185 "Habitat protection and enhancement" (item 3). Delete "when available" from the last sentence.

Response **The DEIS, page A-5, item 3 has been changed to remove "when available" (FEIS p. A-6).**

Commentor(s) 60

Comment 186 "Education and awareness" (item 2). Add the following sentence, which was omitted from this item, but present in the wording of the reasonable and prudent alternative in biological opinion:
"The Forest Service shall also make the decontamination station(s) at the Allegheny Reservoir and/or elsewhere on the ANF available to entities using these boating facilities."

Response **The education measures described in 1a and 1b were excluded from the Conservation Program because they had already been implemented and will continue to be implemented. These measures have been added to the Conservation Program (p.A-12) and are included in our Zebra Mussel Action Plan (Appendix A, Attachment A).**

Commentor(s) 60

Comment 187 ...a new survey strategy should be employed to increase the likelihood of finding the species if it is present on the Forest. This new strategy would involve identifying and surveying the best potential habitat each year during the optimum survey window (approximately mid-May to mid-June) instead of surveying for each individual project. If the species is found, macro- and micro-habitat data should be collected to assist the Forest Service in identifying other areas on the Forest that should be surveyed.

Response **The wording in Appendix A concerning a survey strategy has been changed to reflect the need for a new strategy(p. A-12).**

Commentor(s)	60
Comment 188	Table 20 (p. 50) This table should include the number of exotic/introduced species for each category.
Response	We have included a discussion of exotic/introduced species in the EIS. See Chapter 3, page 61.

Table 2. List of Commentors

Forest Commentor ID	Last Name	First Name/ MI	Forest Commentor ID	Last Name	First Name/ MI
1	Howard	James Ray	40	Gorman	Rick
2	Tockman	Jason	41	Gash	Abby
3	Coleman	Philip	42	Kora	Christina D.
4	Weeks	Cynthia	43	Scharf	Stanley S.
5	Johnson	Don	44	Baribeau	Julie
6	Trent	Nancy	45	Nadle	Jonathan
7	Gregory	Alan C.	46	Keslick	Carolyn
8	Hanes	Shane	47	Daly	Tina
9	Kelley	Susan M.	48	Rauch	James
10	Lewis	Marvin	49	Lewis	—
11	Wickelhaus	Martha	50	Toy	Bryan
12	Keslick	John A.	51	Head	David
13	Rooney	Thomas P.	52	Davis	Marie
14	Gardner	John E.	53	Frantz	Barry
15	LaValle	Edward P.	54	Mueller, PhD	Robert F.
16	Griswell	Carl A.	55	Martin	Joseph V.
17	Hughes	Shannon A.	56	Hedlund	Jack
18	Zellie	Heidi	57	Kase	Thomas C.
19	Shively	Daniel C.	58	Talbott	Ryan
20	Brandsdorfer	Steven	59	Leslie	Robert E.
21	Kleissler	James	60	Chezik	Michael
22	Johnson	Kirk	61	Sykes	Kristen
23	Martin	Rachel	62	Bensman	Jim
24	Ward	Saralyn	63	Ingerson	Lawrence H.
25	Murawski	Susan	64	Jedlicka	James
26	Kentucky	Hardwood	65	Taylor	Terri
28	LaFort	Paul & Eileen	66	Beinhaver	Justin
29	Browngoehl, M.D.	Kevin	67	Muessig	Daniel
30	Welhasch	Olena	68	Feldman	Ben
31	Demos	John	69	Wood-Campbell	Karen
32	Simson	Christa	70	Kerwin	Bridget
33	Halpen	Jennifer	71	Fish	Viciki
34	Boyce	Drisanna	72	Wygand	Doris
35	Stock	Jesse	73	Kear	Sue
36	Curry	Susan	74	Sudash	Tracy A.
37	Sins	L. Hale	75	Ricciondi	Richard
38	Nalbone	Jennifer	76	Causer	William
39	Reinmann	Andy	77	Forren	John

Ridgway Township Board of Supervisors

Ridgway Drive - Ridgway, PA 15853
Telephone (814) 773-5625

CC APR-5 1998:09

Allegheny National Forest
PA 15853

OFFICE HOURS

Monday thru Friday
9:30 a.m. to 4:00 p.m.

April 3, 2000

Warren Ranger District
P.O. Box 847
222 Liberty Street
Warren, PA 16365

RE: 1920 (Warren)

Dear Supervisor:

We appreciate your efforts in inviting us and others to provide input into your final decision-making process regarding the above-named project. We further understand that the ultimate decision affecting these projects will be made according to Forest Plan Standards and Guidelines. We can only imagine that these guidelines were set down following the passing of the referendum by Pennsylvania voters on May 21, 1970, known as the "Pennsylvania Declaration of Environmental Rights", with coaching from Arthur Davis, who was Director of the Pennsylvania Land Policy Project. This and other patronizing information has led the Allegheny National Forest to be faced with these decisions today. Hopefully, the final decisions regarding these projects will be made by persons who are neither too environmentally minded, nor too far-minded in the opposite direction, but by persons who can reach an objective determination for the good of all parties involved.

Our responsibility is to the citizens of Ridgway Township. We were elected by them and have taken oaths of office to uphold such responsibilities to them. Among those responsibilities is the financial welfare of the township and the constraint put on the tax payers to run this municipality. The first comment that we would like to note is the deficit of \$38,686.24 from the National Forest Fund Distribution from the prior year 1998.

We still feel that multiple use management should resume in the Allegheny National Forest. We feel that all species, including man, would best benefit from the approach of educated, skilled, forestry persons running the program. Everything in the forest, in life, in the world, in the universe is best conducted in moderation. As timber harvesting in these projects has been halted since April of 1999, at a great cost to many, would it not appear that once more as in the coal and oil industries, just one more phase of our lives is being grossly regulated.

It has been our understanding, through observation and study, that if a forest is not harvested, it will rot. The undergrowth would not be conducive to maintain feeding of wildlife, nor would new saplings grow to produce a new stand of timber to be harvested, having been closed to the sun. Even clear cuts provide animal shelter. Well managed forestry productions of timber benefit not only the wildlife, but the sale of timber greatly benefits the municipalities in which the timber lies and saves a tremendous burden on the tax payers.

God gave man "dominion over the earth". We feel that with a healthy, conservative attitude the persons who attend our forests will ultimately make decisions that will be, within reason, beneficial to all. That is what they are responsible to do. We appreciate the opportunity, once more, to air our opinions. Thank you.

Sincerely,

*Joe Shadron
Edward P. Valle*

Carl A. Gruell

Ridgway Township Board of Supervisors

kek



IN REPLY REFER TO:

United States Department of the Interior

OFFICE OF THE SECRETARY

Office of Environmental Policy and Compliance
Custom House, Room 244
200 Chestnut Street
Philadelphia, Pennsylvania 19106-2904

April 27, 2000

ER00/169

Mr. John Palmer, Forest Supervisor
Allegheny National Forest
PO Box 847
Warren, Pennsylvania 16365

Dear Mr. Palmer:

It has been brought to my attention that approximately one page of intended text is missing in the Department of the Interior's April 21, 2000 letter of comment on the DEIS for Threatened and Endangered Species on the Allegheny National Forest. This text, which should have been included between pages 3 and 4 of our letter, has been included in the enclosed corrected letter.

I apologize for this unintentional omission and I hope that our corrected letter resolves any resulting confusion. I am transmitting this letter and enclosure via telefax and overnight mail.

Sincerely,

Michael Chezik
Michael Chezik
Regional Environmental Officer

Enclosure

cc:

Glen Smith, FWS-R5, Hadley, MA
Carole Copeyon, FWS State College, PA



United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Custom House, Room 244
200 Chestnut Street
Philadelphia, Pennsylvania 19106-2904

IN REPLY REFER TO:

April 21, 2000

ER00/169

Mr. John Palmer, Forest Supervisor
Allegheny National Forest
PO Box 847
Warren, PA 16365

Dear Mr. Palmer:

The following constitute comments by the Department of the Interior on the Draft Environmental Impact Statement (DEIS) for Threatened and Endangered Species on the Allegheny National Forest, Elk, Forest, McKean and Warren Counties, Pennsylvania.

The proposed action (Alternative 1) is to amend Forest Plan standards and guidelines (i.e., revise nine S&G's and add six new S&G's) and adopt a species Conservation Program in order to conserve federally listed species on the Allegheny National Forest. Most of the proposed S&G's, as well as the measures in the species Conservation Program, have been adopted directly from the Fish and Wildlife Service's June 1, 1999, *Biological Opinion on the Impacts of Forest Management and other Activities to the Bald Eagle, Indiana Bat, Clubshell and Northern Riffleshell on the Allegheny National Forest, Pennsylvania*.

The action alternatives (1 and 2) are similar, however, Alternative 2 would result in closure of boating facilities on the Allegheny Reservoir and Allegheny River to prevent the introduction of zebra mussels. Alternative 3 (no action alternative) would not amend the Forest Plan to be in compliance with the biological opinion.

Section 7(a)(1) consultation requirement

As under section 7(a)(2) of the Endangered Species Act, Federal agencies are to consult with the Fish and Wildlife Service (FWS) regarding actions they propose to carry out in fulfillment of their section 7(a)(1) responsibilities. The DEIS fails to acknowledge this requirement (p. 3, p. A-1).

"Causes of Past/Current Decline and Potential for Future Decline" (p. 17)

Neither the clubshell nor the northern riffleshell are commercially valuable; therefore, although they could be taken during black market collecting of shells, they are not the target of collection so this threat is minimal.

Table 8 (p. 26)

Add "roosting areas" under the "unit of measure" for the bald eagle.

Alternative 1 - Clubshell and Northern Riffleshell (pp. 19-29, 61-82)Zebra mussel threat and compliance with biological opinion

In the FWS biological opinion, we found that operation of Forest Service boating facilities with a lack of zebra mussel control measures posed a risk sufficient to jeopardize the continued existence of the northern riffleshell mussel. The Reasonable and Prudent Alternatives (RPAs) in the biological opinion were crafted to avoid, to the maximum extent possible, the introduction of zebra mussels within the middle Allegheny River in order to ensure that operation of boating facilities would not jeopardize this species.

The Forest Service has determined that it is not desirable to close their boating facilities; therefore, they have elected to implement RPA 1 of the biological opinion (appearing as Alternative 1 in the DEIS). This RPA stipulates that by April 1, 2000, "prior to using the Forest Service marina or boat launches on the Allegheny Reservoir, boats shall be screened for potential zebra mussel contamination, and all boats found through screening to be at risk shall be decontaminated using a Service-approved decontamination method. These same procedures shall apply to commercial use of the boat launch at the Buckaloons Recreation Area on the Allegheny River."

Protection of the clubshell and northern riffleshell is proposed under Alternative 1 in the DEIS through adoption of the following S&G (DEIS, p. 19 and Table 6):

"At the marina or boat launches on the Allegheny Reservoir, boats shall be screened for potential zebra mussel contamination, and boats found through screening to be at risk shall be decontaminated using a FWS-approved decontamination method. These same procedures shall apply to commercial use of the boat launch at the Buckaloons Recreation Area on the Allegheny River."

This S&G reflects the intent of the biological opinion; however, the first sentence of this S&G should read: "... marina *and* boat launches..."

Compliance with the RPA also required that the Forest Service submit to the FWS information about the screening method(s) and procedures (e.g., written questionnaire, visual inspection by qualified, trained personnel); decontamination method(s) and procedures; and decontamination facility location(s). In response to this requirement, the Forest Service submitted (on March 29, 2000), a zebra mussel action plan for FWS

review. The action plan provides for voluntary boat inspections/evaluations by boat owners (i.e., to screen their boats for potential zebra mussel contamination), and proposes that boaters be given the names and locations of high pressure car wash facilities in order to decontaminate their boats. Although the RPA stipulates that the Forest Service shall make decontamination station(s) at the Allegheny Reservoir and/or elsewhere on the Allegheny National Forest available to boaters, the Forest Service has voiced a strong objection to installation of any decontamination facilities on the Forest, and further states that "(F)acilities for decontamination would not be provided at ANF launch sites" (DEIS, p. 74).

At this time, it appears that the action plan may not comply with the spirit, letter, and intent of RPA 1, particularly in regard to the proposed location of decontamination facilities, and the level of dependence upon boat owners to conduct their own screening and decontamination. Therefore, until such time as additional details regarding implementation of the action plan are provided, reviewed, and approved by the FWS, it is incumbent upon the Forest Service to temporarily or permanently close boating facilities on the Allegheny Reservoir and Allegheny River, consistent with RPA 2 or RPA 3 of the biological opinion. Permanent closure of facilities (RPA 3) represents Alternative 2 in the DEIS. Temporary closure of facilities until adequate screening and decontamination methods are in place (RPA 2) was not considered in the DEIS, but should be.

The zebra mussel action plan and the effects of its implementation should also be included in the DEIS. Of particular importance would be evaluating the expected level of compliance with RPA 1 (decontamination of vessels) when screening and decontamination depend largely upon the voluntary compliance and initiative of boat operators/owners. The DEIS also fails to evaluate the social and economic effects of requiring that boat operators/owners travel some distance to a decontamination facility, due to the failure to provide readily-available decontamination facilities at or near the marina and/or launches. This could pose a substantial increase in the risk of zebra mussel introduction, since boaters are likely to either not take the initiative to decontaminate vessels, or use a non-Forest Service launch with no decontamination facilities. The DEIS should also evaluate the costs and benefits of compliance with RPA 1 by installing one or more decontamination facilities on the Forest at boating facilities.

If the proposed alternative in the DEIS (Alternative 1) is not implemented in a manner consistent with accomplishing the objectives of the biological opinion (RPA 1), the social and economic costs could be significant, amounting to potentially \$2 million/year and 211 jobs (DEIS, p. 77).

Water quality standards and compliance with biological opinion

The statement is made several times in the DEIS (p. v, Table 11, and elsewhere) that existing S&G's meet or exceed the best management practices outlined by the State of

Pennsylvania. No side-by-side comparison of the S&G's and State standards, however, is presented. We recommend that this type of comparison be included. Our cursory examination of the State's *Special Protection Waters Implementation Handbook* revealed that in some cases State standards are more stringent than those contained in the Forest Plan. For example, the State requires maintenance of a 50-foot buffer strip, plus four feet for each one degree slope, along streams during timber harvesting, while the current S&G (Table 11 of DEIS; p. 4-24 of Forest Plan) requires a 50-foot strip, plus two feet for each one degree of slope. The biological opinion requires that, "at a minimum, these standards and guidelines must be equivalent to State guidelines applicable in High Quality and Exceptional Value watersheds, and should reflect the best available measures for controlling erosion and sedimentation."

The terms and conditions of the biological opinion also stated that the "Forest Plan shall be revised to state that the standards and guidelines intended to protect water quality are mandatory and minimum requirements that are enforceable by the Forest Service." The proposed alternative, however, fails to amend the plan to meet this requirement (e.g., DEIS, Table 6; and Appendix B, Table 3, p. 17). This term and condition was deemed necessary to conserve the clubshell and northern riffleshell based the Forest Service's statement that S&G's provide guidance and direction, but are not considered mandatory.

Also, the DEIS (p. 63) states that the FWS concluded that existing S&G's in the Forest Plan adequately protect water quality for the clubshell and northern riffleshell. This is incorrect. Rather, our biological opinion concluded that non-point source pollution (e.g., sediment) from timber harvesting, road building, and other soil-disturbing activities could decrease water quality for these species. This was the purpose of the water quality monitoring requirements in the biological opinion.

Alternatives 4 and 5 (pp. 27-29)

The biological opinion did not indicate that "T&E species' needs are not compromised by continued implementation of the Forest Plan" (DEIS, p. 27, 28). Rather, it determined that while implementation of the Forest Plan could result in the take of federally listed species, this take was not sufficient to constitute jeopardy to them (with the exception of the northern riffleshell and boating facility operation).

In addition, the Forest Service's biological assessment, and the FWS's subsequent biological opinion, addressed only implementation of the *existing* Forest Plan (with its emphasis on even-age timber management). Neither document evaluated the potential positive or negative effects to federally listed species that may result from implementation of a zero cut or uneven-age management alternative.

In comparison with the existing even-age timber management regime, a zero cut alternative would eliminate or drastically reduce the potential for adverse effects to federally listed species because

no individuals of those species would be harassed, killed, injured, harmed or otherwise taken due to timber harvest activities and associated road construction. Long-term changes in habitat quality are more difficult to judge, however. The zero-cut alternative would avoid any potential degradation of water quality due to non-point source pollution from timber harvesting, thereby having a beneficial effect on the clubshell and northern riffleshell. Habitat quality for the bald eagle may be better over the long term due to an increased number of large super-canopy trees for nesting, roosting and perching. Habitat quality for the Indiana bat may increase due to an increase in the number of large-diameter living trees and snags for roosting, but this benefit may be offset by the concurrent increase in canopy closure.

Uneven-age management produces a different forest structure than even-age management, in that trees of different ages and sizes are present in the stand. This management regime has the potential to produce a more consistent supply of trees for Indiana bat roosting. For example, if a shelterwood seed cut is not followed up by a shelterwood removal cut (i.e., until the next rotation 30+ years later), the remaining trees will provide an ample supply of potential roost trees (due to their increasing size and/or mortality) and the resultant canopy closure would be optimal for Indiana bat foraging and roosting. Many of these benefits are lost under the current even-age management regime because intermediate harvests are usually followed by final harvests 3 to 7 years later. A detailed comparative assessment of both types of management would need to be done to determine which approach would be most beneficial to the clubshell, northern riffleshell, Indiana bat and bald eagle.

Table 18 (p. 47)

The information in this table is misleading because the final harvests, which usually follow the intermediate harvests within 3 to 7 years, are not acknowledged. This table should include average post-harvest conditions that result from all types of intermediate and final harvest types implemented on the Forest. Here, and elsewhere in the DEIS, it appears that final harvest treatments are included under the category of "reforestation" practices rather than harvest treatments.

"Herbicides" (p. 48)

The Draft EIS identifies two herbicides that will be used in reforestation treatments, and specifically states that the two herbicides are not harmful to "mammals or insects, and neither bioaccumulates in animal tissues." We are concerned whether those herbicides will affect birds, reptiles, amphibians, or fish. We are further concerned that precautions be taken to protect threatened and endangered plant species in the Allegheny National Forest from the herbicides.

Table 20 (p. 50)

This table should include the number of exotic/introduced species for each category.

Management Indicator Species (p. 51)

The DEIS mentions that "Thirteen wildlife and three fish species representing a variety of habitats were selected to monitor trends in habitat capability." However, among those animals, none are amphibians. In fact, consideration of amphibians, throughout the report, is lacking. Given the relative pristine nature of the Allegheny National Forest, amphibians, or lack of them, would provide a useful indication of the health of that forest.

Roads - Bald Eagle (p. 61)

With regard to bald eagles, the DEIS states that "if it becomes obvious that road use is adversely impacting the nesting birds, these S&G's could result in the need to either temporarily or permanently close an existing Forest Service road, or relocate an existing Forest Service road away from a nest (p. 61)."

We believe it is the responsibility of the Forest Service, pursuant to sections 7 and 9 of the Endangered Species Act, to monitor road use in the vicinity of eagle nests, and consult with the FWS or take action to avoid impacts to nesting birds *before* adverse effects occur.

ANF Harvest Treatments and Harvest Volumes - Indiana bat (p. 67)

The last sentence of the first paragraph states that it is "conceivable that a roost tree could be discovered within a stand proposed for harvest; the roost tree would be protected." This fails to acknowledge that such an instance would require consultation with the FWS and may require significant limitations on timber harvesting in the vicinity of the roost tree, particularly if it is a maternity roost tree. This same statement appears in the 3rd paragraph under Indiana Bat on page 69 of the DEIS.

Reforestation - Indiana bat (p. 69)

The second paragraph indicates that some partial harvests may result in canopy closures which drop below the 50 percent minimum required in the biological opinion. It should be stated that in such instances, further consultation with the FWS will be required because this was not considered in the biological opinion.

Conservation Program (Appendix A)

The Conservation Program consists primarily of the terms and conditions, and conservation recommendations, contained in the FWS biological opinion. Inclusion of the terms and conditions was done in fulfillment of the Forest Service's section 7(a)(2) responsibilities. Inclusion and proposed implementation of the conservation recommendations is consistent with the Forest Service's responsibilities under section 7(a)(1). However, the FWS would have appreciated the

opportunity to work with the Forest Service in the development of the Conservation Program to explore other measures that could be undertaken pursuant to section 7(a)(1).

The comments below correspond not only to the Conservation Program, but also to associated portions of the DEIS, including Table 6 and Appendix B.

Bald eagle (pp. A3-A5).

- ▶ “Roosting and potential nest trees” (item 1a; see also item 2 in Table 6). We recommend increasing the minimum number of super-canopy trees to be identified and maintained within one-quarter mile of each nest from three (as proposed) to ten. The increase is recommended to better supply eagles with potential nesting, roosting and perching trees over the long term.
- ▶ “Abandoned nest trees” (items 2a and 2b; see also items 4 and 5 in Table 6). These items/S&G’s should be deleted since they are both instances of “abandoned” eagle nests covered under “protection of individuals” (item 1).
- ▶ “Abandoned nest trees” (item 2c; see also item 6 in Table 6). Please indicate restrictions associated with the 330-foot buffer. We recommend including the same restrictions detailed under “protection of individuals” (item 1).
- ▶ “Protection of individuals” (item 1; see also item 1 in Table 6). The term “abandoned” includes nests abandoned for any reason (e.g., move of adults, fallen nest tree, fallen nest, and damaged nest). This should be clarified/defined in the Conservation Program.
- ▶ Reinstate the previous S&G (p. 4-38 of Forest Plan) which provided for a 1,320 foot buffer around nests, but modify it to prohibit management activities from January 15 to July 31 that may affect nesting eagles.
- ▶ “Protection of individuals” (item 4c). This should read “recreational use of the Allegheny River that *may affect* bald eagles.” This is the appropriate threshold for consultation-- not recreational use that *is found to be adversely affecting* eagles. Once adverse effects have been noted, “take” has probably already occurred.
- ▶ Include a new target objective for the number of bald eagle nests on the Forest. The current objective of one nesting pair on the Forest by the year 2020 (p. 4-39 of Forest Plan; Table 11 of DEIS) has already been met. Eight nests is probably not unreasonable considering the availability of habitat and the expanding bald-eagle population.

- ▶ Commit to retaining the Forest Plan S&G's, and Conservation Program objectives and measures, for the bald eagle after the species is de-listed (i.e., no longer receives protection under the Endangered Species Act). The bald eagle has made a remarkable recovery due to the efforts of federal, state and local governments, and private entities. This recovery will be reversed if the conservation efforts and commitments which made it possible are discontinued.

Indiana bat (pp. A5-A8)

- ▶ The potential positive effects to Indiana bat habitat associated with timber harvest (primarily intermediate or partial harvests) are presented in the DEIS in a misleading manner because the following points are omitted or under-emphasized: 1) bats could be harmed or killed during timber harvest operations, 2) the pre-harvest habitat may have been just as suitable as the post-harvest habitat, 3) any potential benefits (e.g., through reducing canopy closure) are short-term and are lost when the final harvest is completed, and 4) the final harvest is likely to reduce canopy closures to levels below those considered suitable for Indiana bats. Therefore, statements to this effect should be qualified or removed from the Conservation Program and elsewhere in the DEIS (e.g., p. 15; Table 17; Table 18).
- ▶ “Habitat protection and enhancement” (item 3). Delete “when available” from the last sentence.
- ▶ “Habitat protection and enhancement” (item 6; see also item 10 in Table 6). Delete “under these terms and conditions” and replace with a reference to the relevant item numbers in this section (e.g., 2, 3 and 5).
- ▶ “Inventory, analysis and monitoring” (item 5f). Add a sentence stating that “(T)he amount of incidental take resulting from implemented activities shall be reported to the FWS quarterly.”
- ▶ It would be helpful to include measures to protect maternity sites on the Forest, should they be found. Some National Forests have included buffers around maternity sites within which land management activities are restricted to protect Indiana bats and conserve their maternity habitat. Such measures could be included after consultation with the FWS.

Clubshell and northern riffleshell (pp. A8-A10)

- ▶ “Education and awareness.” Add measures 1a and 1b from reasonable and prudent alternative 1 of the biological opinion, as follows:

Educational materials (e.g., brochures) regarding the threats posed by zebra mussels, the means of zebra mussel transport, and procedures for decontaminating vessels shall be made available to persons using the marina and boat launches on the Allegheny Reservoir and Allegheny River."

"Signs shall be posted at the marina and boat launches on the Allegheny Reservoir, and at the boat launch on the Allegheny River (at Buckaloons) prohibiting the launching of vessels that may be carrying zebra mussels, unless such vessels have been decontaminated."

- ▶ "Education and awareness" (item 2). Add the following sentence, which was omitted from this item, but present in the wording of the reasonable and prudent alternative in biological opinion:

"The Forest Service shall also make the decontamination station(s) at the Allegheny Reservoir and/or elsewhere on the ANF available to entities using these boating facilities."

Small whorled pogonia (p. A10)

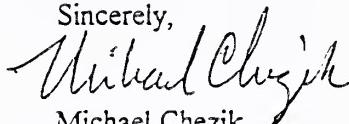
- ▶ Numerous surveys have been conducted on the Forest within proposed project areas in an attempt to locate this species, but no small whorled pogonias have been found. Based on the extensive nature of the surveys that have already been conducted, and the failure of these surveys to detect the species, we agree that a new survey strategy should be employed to increase the likelihood of finding the species if it is present on the Forest. This new strategy would involve identifying and surveying the best potential habitat each year during the optimum survey window (approximately mid-May to mid-June) instead of surveying for each individual project. If the species is found, macro- and micro-habitat data should be collected to assist the Forest Service in identifying other areas on the Forest that should be surveyed.

In December of 1998, the FWS recommended that this new strategy be implemented during the 1999 field season. The strategy, however, has not yet been developed, and is, therefore, unlikely to be implemented during the 2000 field season. If the strategy is not developed in time for implementation during the 2001 field season, a return to project-by-project surveys during the mid-May to mid-June survey window will be necessary.

This strategy should be developed in consultation and cooperation with the FWS and species' experts familiar with the small whorled pogonia's habitat requirements

in Pennsylvania and throughout its range. The strategy should 1) identify the best potential habitats for this species on the Forest, based on the species' documented macro- and micro-habitat requirements in Pennsylvania and elsewhere, and 2) outline the specific methods (e.g., qualifications of surveyors, survey technique, survey intensity, survey window and conditions, etc.) that will be used to adequately survey these habitats.

Thank you for the opportunity to review and comment on this Draft EIS. If you have any questions regarding this matter, please contact Carole Copeyon of the Fish and Wildlife Service's Pennsylvania Field Office at 814-234-4090.

Sincerely,

Michael Chezik
Regional Environmental Officer

cc:

Glen Smith, FWS-R5, Hadley, MA
Carole Copeyon, FWS, State College, PA



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

MAY 9 4 2003

Mr. John E. Palmer
Forest Supervisor
Allegheny national Forest
P.O. Box 847
Warren , PA 16365

Re: Draft Environmental Impact Statement (DEIS) for Threatened and Endangered Species on the Allegheny National Forest

Dear Mr. Palmer:

In accordance with the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, EPA has reviewed the DEIS for the management and enhancement of threatened and endangered (T&E) species on the Allegheny National Forest.

The USDA-Forest Service proposes to amend the Forest Plan standards and guidelines and the monitoring plan to reflect new information such that adequate protection is given to T&E species , including the Bald Eagle, Indiana bat, Clubshell mussel, Northern riffleshell mussel, and the Small whorled pogonia, and their habitats on the Allegheny National Forest. Screening and decontamination procedures will be implemented at boat launch facilities to stem the introduction of Zebra mussels into the Forest waterways.

Based on our review EPA has assigned a rating of LO (lack of objection) to Alternative 1, the proposed action, and a rating of EC (environmental concern) to Alternative 2 and Alternative 3, the No Action Alternative. A copy of the rating system is enclosed for your information.

We agree with the Forest Service that the implementation of Alternative 1 will enhance and preserve the unique biological values , T&E species, and recreational opportunities that exist in the Allegheny National Forest by amending the Forest Plan standards and guidelines to include various strategies to achieve these ends. It will also minimize the risk of introduction of Zebra mussels at Forest Service boat launching facilities on the Allegheny River and Allegheny reservoir. We are concerned that Alternative 2 would curtail recreational opportunities in the Forest while the Alternative 3, NoAction Alternative , would rely on existing standards and guidelines to protect T&E species and would not minimize the introduction of Zebra mussels into the Allegheny River or Reservoir.

Customer Service Hotline: 1-800-438-2474

Thank you for providing EPA with the opportunity to comment on the DEIS. If you have any questions regarding our comments please contact Marria O'Malley Walsh at (570) 628-9685.

Sincerely,



John Forren, Program Manager
NEPA & Regulatory Review

03-08-95

17:01

EPA REGION IV OLA/DPA

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SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION*

Environmental Impact of the Action

LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1--Adequate

The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information

The draft EIS does not contain sufficient information for the EPA fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate

EPA does not believe that draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Pennsylvania Field Office
315 South Allen Street, Suite 322
State College, Pennsylvania 16801-4850



July 20, 2000

Mr. John E. Palmer
Forest Supervisor
Allegheny National Forest
222 Liberty Street
PO Box 847
Warren, PA 16365

Dear Mr. Palmer:

This responds to your letter of July 6, 2000, requesting our review of the draft final Environmental Impact Statement (EIS) for Threatened and Endangered Species on the Allegheny National Forest. On July 18, 2000, Dale Dunshie of your office clarified that the Forest Service is seeking our concurrence on Alternative 1 - the Proposed Action.

The proposed action is to amend the Allegheny National Forest Land and Resource Management Plan (Forest Plan) to provide new and expanded management guidelines for federally listed species on the Forest through the addition, deletion, and revision of several standards and guidelines. Under this alternative, the Forest Service also proposes to adopt and implement a Conservation Program for the Indiana bat (*Myotis sodalis*), bald eagle (*Haliaeetus leucocephalus*), northern riffleshell mussel (*Epioblasma torulosa rangiana*), clubshell mussel (*Pleurobema clava*), and small whorled pogonia (*Isotria medeoloides*).

Selection of Alternative 1 (Proposed Action), meets your agency's consultation requirements under section 7(a)(2) of the Endangered Species Act in that it amends the Forest Plan (via standards and guidelines and a Conservation Program) to incorporate the applicable reasonable and prudent alternative, reasonable and prudent measures, terms and conditions, and conservation recommendations provided in our biological opinion of June 1, 1999. Therefore, we concur with your decision to select Alternative 1.

The proposed action includes the adoption of reasonable and prudent alternative (RPA) 1 from the June 1, 1999, biological opinion. This RPA is being carried out through implementation of the Zebra Mussel Action Plan, which has already been reviewed and approved by the Fish and Wildlife Service (see our letter of May 25, 2000). Recent minor changes which serve to improve protection for listed mussels have been made to the Action Plan in consultation with the Fish and Wildlife Service. The final EIS should reflect those changes.

Additionally, we believe that the Conservation Program, as defined in Appendix A of the EIS, contributes to your responsibility to develop, in consultation with the Fish and Wildlife Service, a conservation program for federally listed, proposed and candidate species occurring on the

Forest, as outlined under sections 2(c)(1) and 7(a)(1) of the Endangered Species Act. Implementation of conservation actions benefitting threatened and endangered species in consultation with the Fish and Wildlife Service is an on-going responsibility of the Forest Service. Therefore, the Conservation Program should be viewed as a working document, whose implementation is subject to change as additional information on these species becomes available (e.g., information on habitat requirements, threats, research needs, and recovery strategies).

We discussed several minor proposed changes to the draft final EIS during a telephone conversation with your staff on July 18, 2000. Your staff indicated that changes to the final document will be made based on our comments; therefore, we will not repeat those comments here. The only additional comments we have relate to the following: 1) bald eagle conservation, 2) the term and condition requiring amendment of the Forest Plan to mandate implementation of water quality standards and guidelines, 3) comparison of State and Forest Plan water quality standards, and 4) Alternatives 4 and 5.

With regard to bald eagle conservation, we recommend that the Conservation Program emphasize that the Forest Service's objective is to protect bald eagles and their habitat so that the population on the Forest can continue to grow and recover. This is much more in keeping with the spirit, letter and intent of section 7(a)(1) of the Endangered Species Act than the Forest Plan objective of having one active bald eagle nest on the Forest by 2020, since this objective has already been met and exceeded.

We would also like to see a commitment by the Forest Service to continue to conserve and protect bald eagles and their habitat on the Forest after any Endangered Species Act delisting of the species. This is in keeping with the Forest Service's stewardship responsibilities, and in recognition of the fact that weakened protection for the species following delisting could contribute to a range-wide decline significant enough to put this species back on the endangered or threatened list. In your letter of May 31, 2000, however, you only committed to continuing to "abide by all laws governing the management of wildlife on National Forests" following delisting, and said that the "standards and guidelines would be followed until the Forest Plan was amended or revised through NEPA analysis." This implies that if the bald eagle is delisted, it could receive less protection under the next Forest Plan, which may be effective as early as 2003.

Pursuant to section 7(a)(1), we also recommend that Standard and Guideline 2 commit to identifying and maintaining more than the *minimum* recovery plan standard of three super-canopy trees within a quarter mile of each nest, and that Standard and Guideline 3 include the maintenance of trees along the Allegheny River.

In your letter of May 31, 2000, you explained that Forest Plan standards and guidelines *must* be followed and that they apply to all management activities on the Forest. Considering this, you indicated that it is not necessary to amend the Forest Plan in accordance with the biological opinion term and condition stating that: "The Forest Plan shall be revised to state that the standards and guidelines intended to protect water quality are mandatory and minimum requirements that are enforceable by the Forest Service." You also indicated that exceptions to the implementation of standards and guidelines are only permitted by Forest Plan amendment or when a separate environmental analysis shows a particular measure would not be effective in a

given situation; in either case, you acknowledged that consultation with the Fish and Wildlife Service would be required. Based on this clarification, we concur that amendment of the Forest Plan to incorporate the subject term and condition is not necessary.

One of the terms and conditions of our biological opinion was that Forest Plan "standards and guidelines must be equivalent to State guidelines applicable in High Quality and Exceptional Value watersheds, and should reflect the best available measures for controlling erosion and sedimentation." In your letter of May 31, 2000, you indicated that the Forest Service has done a comparison of the State's Best Management Practices with the Forest Plan Standards and Guidelines, and as a result of that analysis has concluded that Forest Plan Standards and Guidelines exceed the State's standards. For our records, we request a copy of the analysis you conducted to reach this conclusion; where possible, this should include a side-by-side comparison of the State's guidelines for timber harvesting and road construction with the Forest Plan Standards and Guidelines.

Finally, we note that the EIS continues to rely in part upon the biological opinion to justify not fully examining Alternative 4 (Zero Cut) and Alternative 5 (Uneven-age Emphasis). For example the EIS includes the statement that the biological opinion "does not suggest the need to expand this Forest Plan amendment to analyze the differences in impact of implementing the Forest Plan vs. a zero-cut alternative." It also states that a "more lengthy analysis of the Forest Plan and consideration of other management prescriptions would have been indicated had the BO presented jeopardy findings or terms and conditions that could not be resolved within the current management direction." As we have discussed, the biological opinion did not examine the differences in effects to threatened and endangered species of implementing zero cut and uneven-age management; it addressed only the 1986 Forest Plan and the effects of implementing that plan on federally listed species. Therefore, the biological opinion cannot be relied upon to justify not conducting a more in-depth analysis of Alternatives 4 and 5 (which could have substantially different effects on listed species than Alternative 1) under the National Environmental Policy Act. NEPA compliance and section 7 consultation pursuant to the Endangered Species Act are distinctly different procedures requiring different levels of analysis and documentation. It appears that other documentation, for example, your previous analysis of the feasibility of conducting uneven-age management and/or the potential incompatibility of these alternatives with Forest Plan direction, may be sufficient to eliminate these alternatives from further analysis.

We look forward to continuing to assist you in fulfilling your responsibilities under sections 7(a)(1) and 7(a)(2) of the Endangered Species Act. Please contact me or Carole Copeyon of my staff at 814-234-4090 if you have any further questions regarding this matter.

Sincerely,



David Densmore
Supervisor

APPENDIX G

AMENDMENT #11 TO THE ALLEGHENY NATIONAL FOREST LAND AND RESOURCE MANAGEMENT PLAN

The following documents are enclosed and comprise this amendment to the Forest Plan.

- ❖ Summary of Forest Plan Amendments to date
- ❖ Posting Notice and Digest of Changes
- ❖ Forest Plan Amended Pages



ALLEGHENY NATIONAL FOREST
SUMMARY OF FOREST PLAN AMENDMENTS

Amendment Number	Date	Content Summary
1	February 5, 1991	Corrects three typographical errors made while editing the Forest Plan and revises a portion of the Management Area Map to show the correct location of a boundary on the Sheffield Ranger District.
2	May 22, 1991	Establishes general "programmatic" direction and guidance for controlling understory vegetation on the Allegheny National Forest and modifies the existing understory vegetation management direction (i.e., it allows Forest personnel to consider the use of both glyphosate and sulfometuron methyl, either individually or in combination, to accomplish understory vegetation management).
3	June 28, 1991	Brings the Forest Plan into conformance with 36 CFR 261.12(e), as amended, and current Standards and Guidelines listed in the Trails Management Handbook (6/85).
4	September 30, 1994	Allocates 12 tracts of land added to the Allegheny National Forest since 1982 to appropriate Management Area designations.
5	November 25, 1996	Allocates a 36.59-acre tract of land added to the Allegheny National Forest in Fiscal Year 1996 to an appropriate Management Area designation. Also removes a .69-acre tract from National Forest ownership.
6	December 19, 1996	Provides direction for fish habitat management, including desired conditions for cold- and warm-water fish habitat. It also includes standards and guidelines for improvement and restoration work, and for coordination of water resources with various land disturbing activities. The amendment designates four Remote Trout Streams, and one stream will be added to the State's Wilderness Trout Stream program. Aquatic species are identified for monitoring.
7	September 4, 1997	Designates a corridor boundary for the Allegheny National Wild and Scenic River, approves the River Management Plan, and provides Forest Plan Standards and Guidelines for managing federal lands within the designated corridor.

Amendment Number	Date	Content Summary
8	September 8, 1997	Establishes both general "programmatic" and "site-specific" direction and guidance for controlling understory vegetation on electric utility rights-of-way crossing the Allegheny National Forest by following guidelines established in the EIS for Vegetation Management on Electric Utility Rights-of-way (May 1997) and its associated Record of Decision.
9	September 30, 1997	Disposal of a two-acre parcel as the result of a Small Tracts Act Claim.
10	February 18, 1999	Allocates a 97.13-acre tract of land added to the Allegheny National Forest in Fiscal Year 1998 to Management Area 6.1 designation.
11	July 28, 2000	Amends standards and guidelines for threatened and endangered (T&E) species based on new information that pertains to five T&E species that are known to occur on or near the Allegheny National Forest. Amends the Forest Plan Monitoring Plan to incorporate changes and additions to monitoring requirements for T&E species.

ALLEGHENY NATIONAL FOREST
LAND AND RESOURCE MANAGEMENT PLAN

July 28, 2000

Posting Notice: Amendments to this Forest Plan are numbered consecutively. Check the last transmittal received for this Plan to see that all amendments have been received and posted. Do not post this amendment until you have received all amendments.

<u>Page Code</u>	<u>Page Color</u>	<u>Superseded</u>	<u>New</u> (Number of Pages)
4-24	Ivory	1	1
4-35 – 4-40	Ivory	6	9
B2a – B3	White	2	2

Digest of Changes: Amendment No. 11 makes the following changes to the page(s) specified.

<u>Page</u>	<u>Change</u>
4-24	Amends the first S&G under subsection beginning “Concerned perennial and intermittent streams.”
4-35	Amends list of “Endangered” species and adds list of “Threatened” species.
4-36	In the last paragraph, changes the status of the Small whorled pogonia from endangered to threatened
4-37a & b	Adds guidelines to provide additional protection for Bald eagle nesting and roosting habitat.
4-37c & 4-38	Adds guidelines to provide requirements to protect and enhance the Indiana bat and its habitat.
4-39	Removes guidelines for Small whorled pogonia surveys. Adds guidelines for screening and decontaminating boats at Forest Service boat launches on the Allegheny River and Allegheny Reservoir to reduce the risk of Zebra mussel contamination.
4-40	Adds the second to last paragraph regarding USDI Fish and Wildlife Service’s opinions regarding T&E species.
B2a & B3	Changes Bald eagle monitoring requirements and adds new monitoring requirements for T&E species.

JOHN E. PALMER
Forest Supervisor

- Timber harvesting restrictions are necessary on these soils. Timber skidding equipment will be limited to low ground pressure type models or cable logging systems. Such low ground pressure models will express maximums of seven pounds per square inch (psi) with the machine alone, and 12 psi when the machine is skidding.
- Uneven-aged management should be used on these sites to prevent regeneration failure.
- Scattered residual trees should not be left on these sites due to the high hazard of wind throw.
- These sites are not suitable for recreational developments.
- ORV and hiking trails located on these soils should be built with special surfacing techniques.
- Subsurface water pressure on these sites may dislodge standard toilet vaults and thrust them to the surface. If they must be installed here, use special engineering design to prevent this from occurring.
- Where there is no alternative to constructing roads on these soils, geotextiles will be used.
- Encourage oil/gas operators to use geotextiles in road and drilling pad construction.
- Containment pits for fluids produced from oil and gas operations should not be constructed on these soils due to the high water table.
- If containment pits are built, they must be lined with an impermeable material.

Coordination of Water Resources with Timber Management

Logging systems should be laid out systematically to minimize the number and length of roads needed and to improve the efficiency of the system.

The grade of temporary roads and skid trails should not exceed 15 percent, except lengths up to 200 feet may pitch to 20 percent when sufficient cross-drainage is provided.

Timber harvesting restrictions for poorly and moderately drained soils are provided in the previous text on Soil Groups II and III.

Temporary roads and skid trails will be cross-drained to prevent erosion and sedimentation into streams. After use, all facilities including landings should be permanently closed and erosion-controlled.

Landings located next to system roads may be used for hunter parking or other long-term uses if analysis indicates such a need.

Landings should be located and designed so that sediment will settle out before runoff reaches watercourses. Landings that must unavoidably be located on poorly drained soil types should be used only when the ground is dry or the landing is adequately surfaced.

Bridges, low-water crossings with pipes, or culverts will be provided to cross perennial and intermittent streams and will be designed so as not to impede upstream fish movement on fish-bearing streams.

All temporary fills in stream channels shall be removed in their entirety and the area restored to its original elevation.

Sale layout will avoid, to the extent practical, the need for skidders to cross perennial and intermittent streams. Crossing by skidders will occur only at designated sites. A temporary crossing will be constructed to prevent degradation of stream banks and bed.

No skidding or trucking is permitted down any portion of any stream or streambed.

Concerning perennial and intermittent streams:

- A filter strip will be maintained to minimize the movement of silt, humus, and other organic matter into the stream. The standard width is 50 feet plus 4 feet for every one degree of slope adjacent to each side of the stream or the actual size of the riparian area, whichever is larger.
- Streams will be kept free of logging debris, sawdust, equipment, oil, and other materials or obstructions that interfere with the orderly flow of water or adversely affect water quality.
- Logging operations should maintain the existing structure and shape of streambanks. This includes maintaining trees that are providing streambank stability, trees growing within the channel, and trees that have a high potential for providing instream woody material.

Four streams identified for long-term monitoring will not be artificially improved. These streams have been identified to monitor long-term trends of the variation in habitat, water quality, and fish and aquatic insect communities without direct stream alterations (e.g. fish habitat improvement structures). The streams include:

<u>Stream</u>	<u>Tributary to:</u>
Blood Run	Tionesta Creek
Buck Lick Run	Chappel Fork
Mead Run	Tionesta Creek
Slide RunBig	Mill Creek

Refer to 2500 Water and Soil Management and 2600 Wildlife and Fish Habitat Management for each Management Area for additional standards and guidelines to protect water quality, stream temperature, and fish habitat.

Endangered, Threatened, and Forest Species of Concern

The habitat requirements of all animal and plant species that are listed or proposed for listing as endangered, threatened, or of special concern in Pennsylvania were considered in developing the Forest-wide standards and guidelines, as well as those for specific management areas. Most of the species of concern can be protected and their habitat requirements provided by these standards and guidelines. Some species, however, need additional considerations for various reasons to insure that viable populations will be provided on the Forest. The following species were selected in cooperation with the Pennsylvania Game Commission; Pennsylvania Fish and Boat Commission; Pennsylvania Department of Environmental Resources, Bureau of Forestry; and Western Pennsylvania Conservancy, to receive special emphasis in the management program. A complete listing of animals and plants and their classifications by the responsible state agency is on file in the Forest Supervisor's office.

Endangered

Clubshell Mussel (*Pleurobema clava*)
Indiana Bat (*Myotis sodalis*)*
Northern Riffleshell Mussel (*Epioblasma torulosa*)

Threatened

Bald Eagle (*Haliaeetus leucocephalus*)
Small whorled pogonia (*Isotria medeoloides*)

Forest Species of Concern

Osprey (*Pandion haliaetus*)**
Henslow's Sparrow (*Ammodramus henslowii*)***
Cooper's Hawk (*Accipiter cooperii*)
Red-shouldered Hawk (*Buteo lineatus*)
Northern Goshawk (*Accipiter gentilis*)
Sharp-shinned Hawk (*Accipiter striatus*)
Grasshopper Sparrow (*Ammodramus savannarum*)
Marsh Wren (*Telmatodytes palustris*)
Eastern Bluebird (*Sialia sialis*)
Great Blue Heron (*Ardea herodias*)
Raven (*Corvus corax*)
Bobolink (*Dolichonyx oryzivorus*)
Bobcat (*Lynx rufus*)
Keen's Little Brown Bat (*Myotis keenii*)
Silver-haired Bat (*Lasionycteris noctivagans*)
Timber Rattlesnake (*Crotalus horridus*)
Small-headed Rush (*Juncus brachycephalus*)
Broad-leaved Water Plantain (*Alisma plantago-aquatica*)
Puttyroot (*Aplectrum hyemale*)

* This species was found to occur within the Allegheny National Forest in August 1998. Summer roost and foraging habitat is found in great abundance throughout the ANF. Habitat for this species will be provided through implementation of standards and guidelines. The following standards and guidelines provide specific diameter requirements for live and dead trees that provide habitat for Indiana bat. Trees retained to fulfill snag and den tree requirements (see page 4-32) can also be counted towards these requirements.

** This species is classified as Threatened by the state and is a migrant. It has attempted to nest here recently. A hacking project is underway on the Allegheny Reservoir in New York.

*** This species is classified as Threatened by the state and occurs on private land within the proclamation boundary.

The small-whorled pogonia (*Isotria medeoloides*), that is classified as Threatened on the federal list, was not included on the Forest list because it has not been known to occur on this unit historically. Since a population of this species has been located recently in Venango County near Oil City, Pennsylvania, within the general region of the Forest, the guidelines for locating this species will be utilized to protect it.

The standards and guidelines included here are designed to complement those in other sections of the Plan. They will provide additional assurance that the aforementioned animal and plant species and their habitats will receive special consideration during the planning and execution of management activities on the Forest.

The federal and state lists will be reviewed at least once annually, and the Forest list will be revised as deemed necessary in cooperation with the Pennsylvania Game Commission, Pennsylvania Fish Commission, and the Pennsylvania Department of Environmental Resources, Bureau of Forestry. Amendments to the current standards and guidelines will be based on any modification of the Forest list and on any new management techniques that are developed.

Habitat of endangered, threatened, and Forest Species of Concern will be protected or enhanced.

The Forest will carry out National Forest responsibilities in Recovery Plans for federally threatened and endangered species and will develop management plans for all federal and state threatened and endangered species, except for migrants or visitors, that are essentially unaffected by management of the Forest. Direction will include the following requirements:

1. Cooperate in re-introduction programs if deemed appropriate by state agencies.
2. Assess the occurrence of animal and plant species in all areas to be affected by land adjustment or resource management activities, and design action to avoid, minimize, or mitigate potential adverse effects.
3. Acquire lands or rights needed to protect or reestablish threatened or endangered species of animals or plants.
4. Protect specific key habitats and specialized habitats through coordination with other resource management activities or area closure.
5. Provide desirable nesting vegetation for the marsh wren within and adjacent to wetlands.
6. In wildlife openings provide trees with suitable nesting cavities for bluebirds, or install nesting boxes.
7. Enhance rattlesnake denning and basking sites by release cutting.
8. Identify and manage potential nest trees in suitable locations for the bald eagle and osprey.

- 8a. The following guidelines provide additional protection for potential Bald eagle nesting and roosting habitat:
- Three or more super-canopy trees should be identified and maintained within one-quarter mile of each nest as roosting and perching sites. These trees may be large white pines, dead deciduous trees, or trees with dead or broken tops.
 - On the side slopes surrounding the Allegheny Reservoir and on the side slopes along the Allegheny River, Tionesta Creek, Clarion River, Kinzua Creek, and Salmon Creek maintain scattered white pines and other trees with potential for use as nesting or roosting trees. Consider not only trees that are super-canopy trees but also trees that may provide nesting or roosting sites in the future, such that a sustainable supply will be available.

Abandoned Nest Trees

When a nest is classified as a remnant, that is, one that has been unoccupied for five consecutive years, and is not being maintained by eagles, retain only the 330-foot buffer zone. Prohibit disturbances within this buffer zone as stated in 10a on page 4-37b.

Roosting Areas

Bald eagle roosting areas shall be identified and protected. Activities that may result in the incidental take of roosting eagles or degradation of roosting habitat shall be restricted within 0.25 mile (1,320 feet) of identified roosting sites

9. Construct nesting platforms for ospreys where suitable nest trees are lacking but habitat is otherwise appropriate.
10. The guidelines to protect selected birds during the nesting season are the following:
 - Prohibit disturbances within approximately 330 feet of each existing nesting location, except those necessary to protect the nest or colony.
 - Prohibit significant changes in the landscape within 660 feet of each existing nesting location.
 - Restrict management activities* that result in adverse disturbance to nesting birds within approximately 1,320 feet of each nest location.

- Local roads will be closed to public use where active nests are located.

The species included here and their critical time periods are the following:

Osprey - May 1 to August 15
Cooper's Hawk - March 1 to July 31
Red-shouldered Hawk - March 1 to June 30
Northern Goshawk - April 1 to July 31
Sharp-shinned Hawk - April 15 to August 15
Great Blue Heron - March 1 to August 31
Raven - February 1 to May 15

* Includes road and trail construction and maintenance, timber cutting and hauling, oil and gas development (where possible), right-of-way management, etc.

- 10a. The following buffer zones and time of year restrictions shall apply to Bald eagle nests, including those abandoned for ≤ 3 years*:

- Year-round, all activities that may disturb eagles or significantly alter habitat including, but not limited to, timber harvesting, land clearing, federal oil and gas development, road construction and operation, and trail construction and operation, shall be prohibited within a zone extending at least 660 feet from the nest. This prohibition does not apply to the implementation of measures that are necessary to protect or monitor the nest.
- From January 15 to July 31 of each year, people and aircraft (under FS control) should not be allowed within 660 feet of the nest. This distance should be increased if topography and/or vegetation permit a direct line-of-sight from the nest to potential activities. This prohibition does not apply to qualified persons conducting necessary eagle research and management.
- From August 1 to January 14 of each year, hunting, fishing, and other recreational activities are allowable within 660 feet of the nest; however, these activities should be restricted within 330 feet of the nest.

- From January 15 to July 31 of each year restrict management activities that result in disturbance to nesting birds within approximately 1,320 feet of each active nest location. Examples of management activities that should be restricted include road and trail construction and maintenance, timber cutting and hauling and federal oil and gas development, etc.

* Abandoned nests include those nests abandoned for any reason (e.g. movement of adults, fallen nest tree, fallen nest, and damaged nest).

10b. The following guidelines provide requirements to protect and enhance the Indiana bat and its habitat.

- For both partial and final harvests in green units (harvested material consists primarily of live, healthy trees) retain all snags. Retain at least 8-15 live trees ≥ 9 inches d.b.h. per acre in final harvest units, and at least 16 live trees ≥ 9 inches d.b.h. per acre in partial harvest units.
- For both partial and final harvests in salvage units (dead or dying trees make up 50 percent or more of the harvested volume), and clear-cut, retain at least 5-10 snags ≥ 9 inches d.b.h. per acre, and of these one snag ≥ 16 inches d.b.h. per two acres. Also retain at least 16 live trees ≥ 9 inches d.b.h. per acre, and 3 live trees ≥ 20 inches d.b.h. per acre in partial harvest units; and retain at least 8-15 live trees ≥ 9 inches d.b.h. per acre, and 1 live tree ≥ 20 inches d.b.h. per acre in final harvest units and clear-cut.
- Live residual trees to be retained under 10b shall, where available, be Class 1 or Class 2 trees (as identified by Romme et al., 1995), or other trees exhibiting or likely to develop characteristics preferred by Indiana bats (e.g., exfoliating bark).
- Designate and retain living residual trees in the vicinity of about 1/3 of all large diameter (≥ 12 inches d.b.h.) snags with exfoliating bark to provide them with partial shade in summer.

- For partial/intermediate harvests (e.g., thinnings, shelterwood seed/prep, selection cuts) in healthy stands (stands where volume being removed is predominantly healthy, living trees), reduce canopy closure to >50 percent.
 - All known roost trees on the ANF will be protected until such time as they no longer serve as a roost (e.g., loss of exfoliating bark or cavities, blown down, or decay). In the event that it becomes absolutely necessary to remove a known Indiana bat roost tree, such a removal will be conducted through consultation with FWS, during the time period when the bats are likely to be in hibernation (November 15 through March 31). Trees identified as immediate threats to public safety may, however, be removed at any time following consultation with the FWS.
 - Demolition or removal of buildings or other man-made structures that harbor bats should occur while bats are hibernating. If public safety is threatened and the building must be removed while bats are present, a bat expert should examine the building to determine if Indiana bats are present.
11. Manage selected permanent openings in desirable vegetation types to provide habitat for the Henslow's sparrow, bobolink, grasshopper sparrow, and bluebird.
 12. New roads, trails, recreation facilities and other developments will be located to avoid the following:
 - Rock ledge areas suitable for raven nesting sites
 - Rocky areas on southern and southeastern exposures suitable for snake dens
 - Caves or rock outcrops with crevices suitable as hibernaculums for the Keen's little brown bat and silver-haired bat
 - Existing nesting locations for Henslow's sparrow, Cooper's hawk, red-shouldered hawk, northern goshawk, sharp-shinned hawk, great blue heron, and raven
 - Potential nesting sites for the bald eagle and osprey
 - Habitats where the small-headed rush, puttyroot, and broad-leaved water plantain are present

13. To reduce the risk of jeopardy to Northern Riffleshell mussel, the following shall be implemented: At the marina and boat launches on the Allegheny Reservoir, boats shall be screened for potential Zebra mussel contamination, and boats found through screening to be at risk shall be decontaminated using a FWS-approved decontamination method. These same procedures shall apply to commercial use of the boat launch at the Buckaloons Recreation Area on the Allegheny River. Screening and decontamination procedures are conducted in accordance with the Zebra mussel action plan (ANF CP), which is approved by the FWS and updated by agreement as needed.
14. Prior to issuance of a general botanical collection permit, individuals will be notified of the state regulations, Chapter 82, "Conservation of Pennsylvania Native Plants." The collector will be given a list of the plant species of special concern as they are contained in the state regulations and notified of the special provision for the collection of Pennsylvania endangered and threatened plant species through the wild plant management permit application procedures.
15. The Forest will not pursue a bald eagle hacking project during the first plan period based on consultation with Pennsylvania Game Commission wildlife biologists. If another organization or agency decides to initiate one based on additional data, we will cooperate to the extent possible through habitat management and coordination with other resource management activities. Our current objective is to establish one nesting pair of bald eagles on the Forest by the year 2020.
16. Coordination with other resource management activities.

Timber

Manage the existing timber stands as old growth where great blue heron colonies are located.

Retain as potential great blue heron nesting areas mature or old growth timber stands where American beech is a major component. These stands should be located near existing colonies when possible and should occur in similar locations.

Herbicides will be applied in a manner to avoid any adverse effect on the plants listed in this section of the Plan.

Refer to items 2, 4, 10, and 13.

Recreation

Existing ORV and foot trails will be managed to avoid conflicts between the public and "Species of Special Concern in Pennsylvania". As an alternative, the trail will be relocated to provide the protection required for these species. Refer to items 2, 4, 10, 12, and 13.

Transportation Planning and Road Management

Local roads will be closed to public use when necessary to provide additional protection for the bobcat and rattlesnake. Refer to items 2, 4, 10, 12, and 13.

Special Use Permits

Provisions will be included in special use permits to protect "Species of Special Concern in Pennsylvania". Refer to items 2, 4, 10, 12, and 13.

Land Acquisition

Refer to items 2 and 3.

17. The Forest will cooperate with other agencies and organizations interested in conducting special surveys concerning these species and other species that may occur here.

The U. S. Department of Interior, Fish and Wildlife Service, has reviewed the Land and Resource Management Plan, as required under the Federal Endangered Species Act (PL93-205). Their opinion is that "the management plan will not jeopardize the continued existence of the bald eagle." This agency's complete reply is on file in the Forest Supervisor's office.

In June 1999, the U.S. Department of Interior, Fish and wildlife service issued a second Biological Opinion based on new threatened and endangered species information. They concluded that implementation of the Land and Resource Management Plan is not likely to jeopardize the continued existence of the Bald eagle, Indiana bat, and Clubshell mussel. Incorporating measures to prevent or reduce the risk of Zebra mussel introduction at boating facilities will result in a determination of "not likely to jeopardize the continued existence of the Northern Riffleshell."

The Pennsylvania Game Commission, Pennsylvania Fish Commission, and Pennsylvania Department of Environmental Resources, Bureau of Forestry, have reviewed the Plan and concur that it provides adequate direction to protect or

MONITORING PLAN (cont.)

Source and Purpose of Monitoring Action	Activity Effect Practice Output	Unit of Measure	Frequency of Measure	Techniques and/or Data Sources	Expected Precision	Expected Reliability	Responsibility
36 CFR 219.19 (cont.)							
	<u>Ecological</u>	Population Trend	Annual	Stream and Lake surveys	Moderate	Moderate	U.S. Fish and Wildlife Service and PA Fish and Boat Commission
	Brook Trout						
	Smallmouth Bass						
	<u>Demand Species</u>	Population Trend	Annual	Lake survey	Moderate	Moderate	Allegheny National Forest
	Walleye						
	<u>Fish Community</u>	Species Composition	Annual	Stream and Lake surveys	Moderate	Moderate	Allegheny National Forest
		* These species will be surveyed on same transect (see p. B-2)					
	<u>Monitor Aquatic biodiversity</u>						
	Bald Eagle	Nesting success, Nest productivity, Roost sites	Annual	Field surveys	Moderate	Moderate	Allegheny National Forest
		Monitor threatened and endangered species to protect, maintain, or enhance key habitat.					
	Indiana Bat	Use of hibernation Foraging, roost, maternity and pre-hibernation habitat	Annual	Field surveys	Moderate	Moderate	Allegheny National Forest
	Clubshell Mussel	Potential impacts to habitat quality	Annual	Water quality monitoring	Moderate	Moderate	Allegheny National Forest
	Northern Riffleshell Mussel	Potential impacts to habitat quality	Annual	Water quality monitoring	Moderate	Moderate	Allegheny National Forest
	Small Whorled Pogonia	Identify high potential habitat and survey for the occurrence of plants	Annual	GIS and focused field surveys	Moderate	Moderate	Allegheny National Forest

MONITORING PLAN (cont.)

Source and Purpose of Monitoring Action	Activity Effect Practice Output	Unit of Measure	Frequency of Measure	Techniques and/or Data Sources	Expected Precision	Expected Reliability	Responsibility
<u>36 CFR 212.12(k)(5)</u> Assure lands adequately stocked within five years.	Regeneration Acres	Acres Established	First, third and fifth years	Stocking surveys and Annual Report	Very High	Very High	Allegheny National Forest
Determine extent and severity of insect and disease occurrence.	Tree/stand vigor	Acres	Annual	Air surveillance	Moderate	High	Allegheny National Forest; State and Private Forestry
Determine if final harvest size limits are appropriate.	Timber Final Harvest	Acres	Every 5 years	Field surveys; public comment; resource output estimates	Moderate	Moderate	Allegheny National Forest
Determine if lands not suited for timber production have become suited.	Management Area Allocation	Acres	Every 10 years	Field surveys FORPLAN analysis	Moderate	Moderate	Allegheny National Forest
<u>Dispersed and Developed Recreation and Wilderness Problems</u>	RVD's	Annual	RIM or MAR	Moderate	Moderate	Moderate	Allegheny National Forest
Determine use of recreation opportunities provided to assure appropriate mix that satisfies users.							

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